

RE M I N D E R S		➤ Course Evaluation Period runs through May 17. Check your Hunter email for instructions.
❑ EXAM III – Final Exam Tuesday, May 22. Covers only Part III of this course.	❖ Extra Credit: “Think Geographically” Essays from <u>any five</u> of Chapters 4-12 chapters or the 3rd topic from required essay list plus 4 chapter essays . – Last day to submit is May 15 but it is best to do them as you finish reading a chapter. – Any other form of extra credit proposal must be approved by me in advance.	
Textbook chapters for exam III: Selected parts of Ch. 6-12.		
➤ Two required essays (10% of your grade) were due Mar. 27th . Late penalty now applies.		
➤ Extra credit may be submitted before the deadline. ➤ Don't wait for the night before to do it.		

**GEOG 101
PART III**

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Life on Earth: Population Geography 3 Chapter 6

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Hunter College Geography

Lecture design, content and presentation: CAPG 0438
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**Lecture Topics for
Part III**

- ✓ **I Intro. to Human Geography**
- **II Living on the Earth**
- ✓ A. Habitat
- ✓ B. Demography
- ✓ C. Medical geography
- ✓ D. Population growth
- III Economic Geography**
- IV Urban Geography**
- V Political Geography**

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Medical Geography

❖ **MEDICAL GEOGRAPHY** studies the **well-being of people as an aspect of habitat.**

- Medical characteristics are studied **spatially** (where they occur).
- They are **correlated to conditions of site and situation** as wind direction, watershed, wells and aquifers, routes of dispersal.

❖ **EPIDEMIOLOGY:** the study of the causes and control of disease

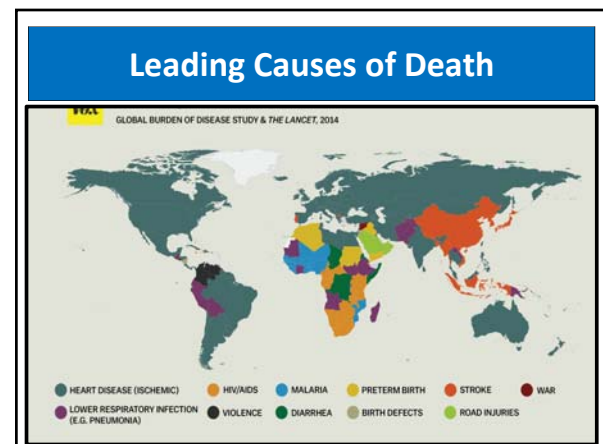
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Health and Nutrition

Important part of the population question.

- Areas with good health and nutrition can accommodate large numbers of people.
 - ✓ They are also become **PULL** factors.
- Analysis includes:
 - Food availability (type/diet/caloric value)
 - Life expectancy/infant mortality (BR/DR/wellness)
 - Disease (susceptibility/transmission/DR/social issues)

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Dr. John Snow's Cholera Map

Cholera pandemic reached London in 1842.

Dr. John Snow began to map each case and death. He was convinced contaminated water was to blame and he associated new cases with tainted wells.

When officials refused to shut down wells, he removed the well pump handles to prevent their use.

New cases decreased immediately.



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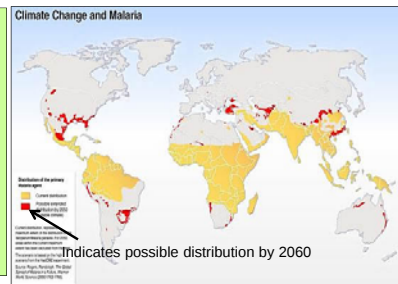
Climate Change and the Spread of Disease

Results of changing climates:

Drought (wind-borne dust diseases)

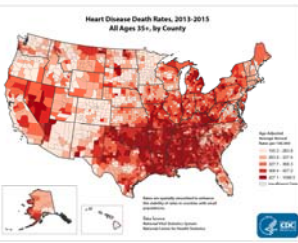
Increased Rain-fall (water-borne diseases)

Warmer Temps (increase range of mosquitoes and other heat-sensitive insects)

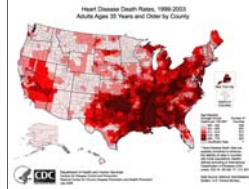


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Heart Disease in the US by Region and Over Time



2013-2015

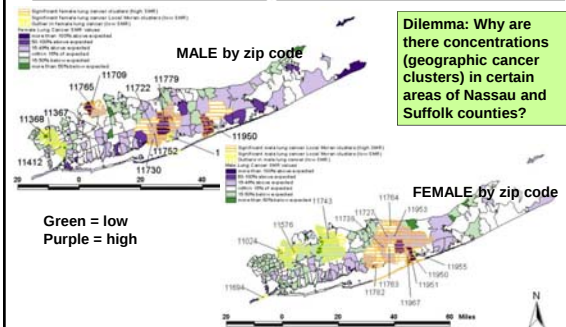


1999-2003

Note the change in distribution and concentration between 1999 and 2015.

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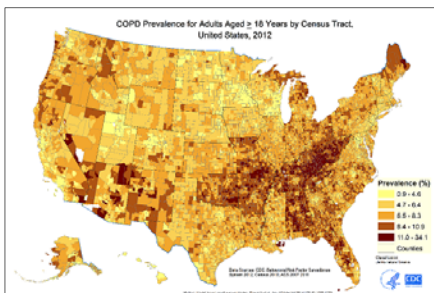
Lung Cancer Occurrence on Long Island, NY



Green = low
Purple = high

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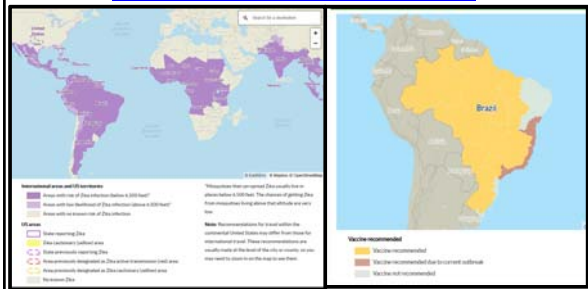
COPD in the USA



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Risk Maps: Zika and Yellow Fever

<https://wwwnc.cdc.gov/travel/yellowbook/2018/list/maps>



<https://wwwnc.cdc.gov/travel/pa/ge/world-map-areas-with-zika>

<https://wwwnc.cdc.gov/travel/notices/alert/yellow-fever-brazil>

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Distribution of Schistosomiasis



<https://www.cdc.gov/travel/yellowbook/2018/infectious-diseases-related-to-travel/schistosomiasis>

Schistosomiasis (bilharzia) is caused by flatworm larva.

Waterborne transmission occurs when larva found in contaminated freshwater, penetrate the skin and lodge in the bladder and intestines where they grow and mature. Worm eggs are passed out of the body through urination and defecation.

There are no vaccines or drugs for preventing infection.

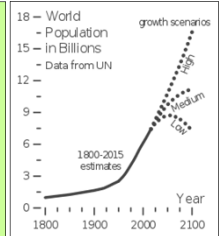
Preventive measures are avoiding wading, swimming, bathing or other contact with freshwater in disease-endemic countries.

Untreated piped water coming directly from freshwater sources may contain these parasites.

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Health, Nutrition and Numbers of People

❖ If humanity addresses and deals with this important part of the population question by making people healthier and therefore living longer, what affect will this have on the earth's ability to support its growing population?



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Population Growth and Overpopulation

The world needs to deal with the present rate of population growth and overpopulation.

- There is a need to either **increase the carrying capacity** of an area (habitat quality) or **reduce the stress** of a population on the habitat.
- Can this be done? How can this be done?

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Population Growth

1 AD: 250 mil people on earth
 1650: 500 mil = 1,650 yrs to double
 1830: 1 billion = 1830 yrs to reach 1 billion
 1925: 2 billion = 95 yrs to add 1 billion
 1960: 3 billion = 35 yrs to add 1 billion
 1975: 4 billion = 15 yrs to add 1 billion
 1986: 5 billion = 11 yrs to add 1 billion
 2000: 6 billion = 14 yrs to add 1 billion
 2011: 7 billion = 11 yrs to add 1 billion
 >2023: 8 billion = 12 yrs to add 1 billion?



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Dealing with Population Growth

How can this be done?

There are 5 general scenarios:

1. Expand the resource base
2. Emigration
3. Economic change
4. Education
5. Natural population controls

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Dealing with Population Growth

How can this be done?

1. **Expand the resource base** (carrying capacity).
 - A. Use of technology (existing and/or new).
 - B. Creation of artificial environments.
 - C. Make new discoveries.

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Dealing with Population Growth

How can this be done?

2. Emigration.

- A. Encourage movement away
- B. Discourage in-migration
- C. Relocate people to other areas (transmigration)

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Dealing with Population Growth

How can this be done?

3. Economic change (demographic transition model)

- A. Shift from an agrarian to an industrial economy
- B. Shift from rural to urban settlement (may have a negative impact if cities take over farmland)
- C. Use of technology

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Dealing with Population Growth

How can this be done?

4. Education

- A. Knowledge of the local situation
- B. Ability to read and follow instructions
- C. Training in the use of technology
- D. Changing the attitudes and philosophies of people (i.e., culture) regarding family size through dialogue and reasoning.

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Dealing with Population Growth

How can this be done?

5. Natural population controls (involves ethical and moral issues)

- A. Famine
- B. Disease
- C. War
- D. Poverty

Should the world community help borderline areas by providing aid for hunger and prevent disease?

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Biogeography

Studies the spatial aspects of plant and animal life.

- ✓ The relationship between a life forms and the physical environment.
- ✓ Looks at the composition of biomes, habitats, ranges, etc.
- ✓ Migrations.

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Biogeography



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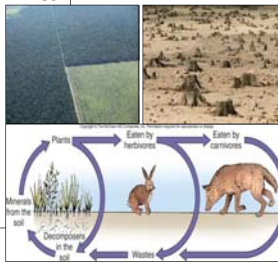


Ecology



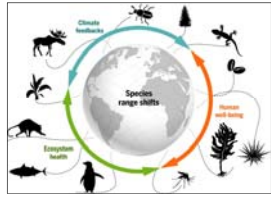
Ecology

- Studies how living things affect each other and what determines their distribution and abundance (habitat).
 - Biosphere, ecosystems, biomes and niches.
 - Quality of habitat and carrying capacity.
 - Food chain.
 - Human interaction.



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Biodiversity: Temperature and Moisture Sensitive



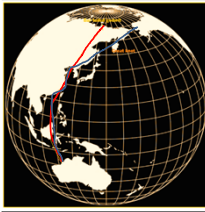



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Plight of Migratory Shorebirds



Bar-tailed Godwit and Great Knot migratory routes. These shorebirds, tracked by GPS, migrate more than 6,000 mi in each direction. They rely on tidal mudflats to rest and eat.

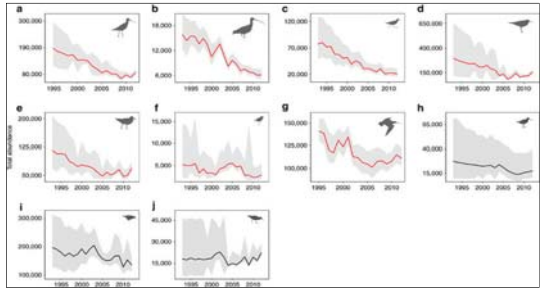


<https://www.nytimes.com/interactive/2018/04/27/opinion/shorebirds-extinction-climate-change.html>

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Declining Migratory Bird Populations relying on Yellow Sea mud flat stopovers sites





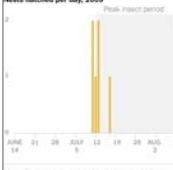
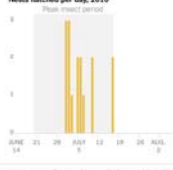
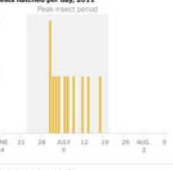
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Climate Change, Hatching and Insect Season



In 2009, Hudsonian godwit nests hatched closer to the start of insect season ...
Bird populations thrive when nests hatch before peak insect season.

... but in warmer years, nests hatched closer to the tail end.
When this happens, there is not enough food for hatchlings.

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NEXT



GEOGRAPHY of ECONOMICS:
Economy, development and sustaining a population.

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