REMINDERS

- ❑ **EXAM II – New Date is Tuesday, April 17.** Get study guide from course home page.

TEXTBOOK READING FOR EXAM II

WEATHER and CLIMATE: Ch. 2
LITHOSPHERE: chapter 3
BIOSPHERE: chapter 4
EARTH RESOURCES: chapter 5

- ❖ Two required essays (10%) were due March 27. Late penalty now applies.
- ❖ Extra Credit: "Think Geographically" Essays from any five 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 essay may be submitted before the deadline.
- ➢ Don't wait for the night before to write them!!

GEOG 101 Part II People and their Physical Environment

18: Earth Habitat

Earth Resources

Prof. Anthony Grande
Hunter College Geography

PART II: People and their Physical Environment

- ✓ **I. Introduction to the Physical Environment**
- ✓ **II. Earth-Sun Relationship**
- ✓ **III. Earth Systems**
- ✓ A. The Hydrosphere: Oceans
- ✓ B. The Atmosphere: Weather and Climate
- ✓ C. The Lithosphere: Geologic Influences

IV. Earth Habitat

- ✓ A. Biosphere
- ✓ B. Natural Controls and Cycles
- ✓ C. Human Impact
- ✓ D. Natural Hazards
- ➢ **E. Resources** **EXAM II isTuesday 4/17/18**

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Part II: Exam Topics

I. Intro. to the Physical Environment
II. Earth-Sun Relationship
III. Earth Systems
- The Hydrosphere: Oceans
- The Atmosphere: Weather and Climate
- The Lithosphere: Geologic Influences

IV. Earth Habitat and Environmental Protection
- Biosphere
- Natural Controls and Cycles
- Human Impact
- Natural Hazards
- Resources

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Bring a #2 pencil with an eraser.

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RESOURCES

❖ **NATURAL RESOURCES**

Aspect of the physical environment that a population deems necessary and useful to it.

- Minerals, energy sources, water, forests, wilderness, soil, and scenery are said to be resources.
- **Once used**, tangible resources return to the earth as **waste**.
- The **value** of a resource depends on its scarcity and demand for use (supply and demand). **There is an uneven distribution worldwide.**

❖ **Potential Resource:** A material that *might* become useful in the near future.

❖ **Resource Management:** The process by which a resource is analyzed, used, conserved and evaluated for future use.

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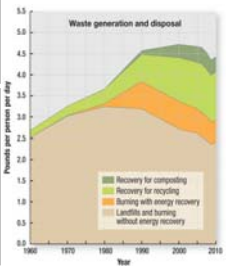
Waste Generation and Recovery

Discarded resources are solid wastes that are buried in landfills or incinerated.

Bi-products of use are eliminated by liquid (sewer) and gaseous (smoke-stack) methods and may act to contaminate areas near their discharge.



POLLUTION

Pollution: Human-created impurities (solids, gases, liquids) that are added to air, water and land and cannot be absorbed, diluted or eliminated by natural processes.

- Artificially generated excessive heat/cold is also considered a form of pollution.

Landfills: collection sites for waste; they have the potential of polluting the surface, underground water and creating visual unsightliness.

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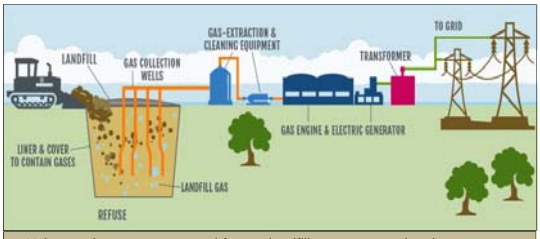
Alternative Energy Production



Using methane gas extracted from a landfill to power an electric generator.

https://www.youtube.com/watch?v=_shqPUEBHTo Fresh Kills, SI methane collection 2 min

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RESOURCES

NATURAL RESOURCE
There are three types of natural resources: Renewable, Non-renewable and Land/biological

1. **Renewable:** Those that able to be regenerated as fast as they are used (some can be depleted if overused).

There are 2 groups of renewal resources:

a. **Perpetual:** solar, wind, running water, tides, waves and geothermal.
b. **Potential:** soil, wood, biomass, and water

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RESOURCES

2. Non-renewable:

Also called geologic resources.

Those that cannot be regenerated in a timely manner.

Examples: fossil fuels, metallic ores, minerals, gems, and semi-precious stones.

3. Land or biological resources:

Resources that provide people with necessities for life as fertile soils, forests, and wetlands.

Where do forests fit in?

(They can be renewable or potentially renewable.)

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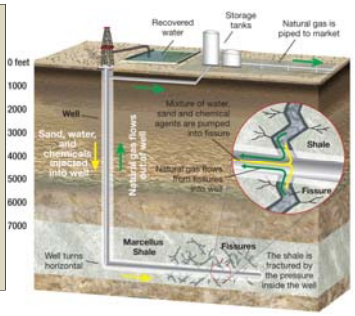
Hydraulic Fracturing aka "Fracking"

- Methods used to remove natural gas and petroleum from places that were once inaccessible.
- Uses modern technology to locate, access and remove the material.
- Has been linked to surface and groundwater pollution.



https://www.youtube.com/watch?v=Uti2niW2BRA 5 min Fracking explanation.

RESOURCES

FOOD RESOURCES: biological resources

Food resources are part of culture and have been created by people from aspects of the physical environment.

- **Agriculture** (first gathering then planting)
- **Wildlife** (first hunting then animal-husbandry)
- **Fisheries** (first fishing then fish-farming)

There is a direct relationship to carrying capacity of the land as a growing human population tries to feed itself.

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RESOURCE MANAGEMENT

- ✓ **Resource management -** the conscious evaluation and use of earth resources for present and future use.
- ❖ **Sustainable Development –** balance between the needs of a population and the quality of habitat.
  - **Tragedy of the Commons –** environmental perception; attitude

    "One more." "Who will notice?
    "My contribution is too small to matter."
    "My contribution will not affect …"

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RESOURCE MANAGEMENT

Resource scarcity and environmental impacts are the most important issues facing a growing and increasingly consuming, world population.

Strategies – options available for people
- **Reuse** (use more than once; recycle)
- **Replace** (substitute; use something else or renewable)
- **Conserve** (use less; avoid waste or destruction)

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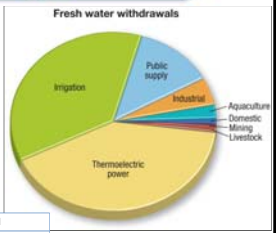
Water Resources

Next to air we need water to survive.

Uneven distribution world-wide: some areas too wet, others too dry.

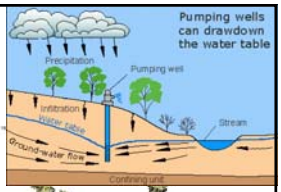
Much of the earth's population has limited access to clean, dependable water supply.

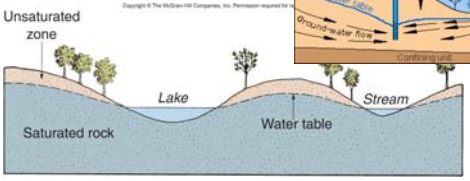


https://www.youtube.com/watch?v=gA_XVxhBmTQ 2.5 min water need

https://www.youtube.com/watch?v=vLgmFRceoVE 2 min desalinization process

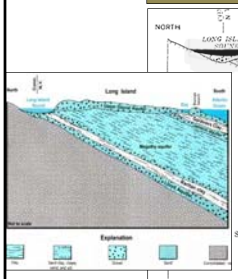
Groundwater Dynamics

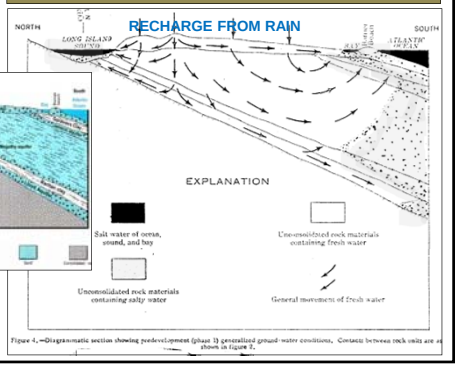




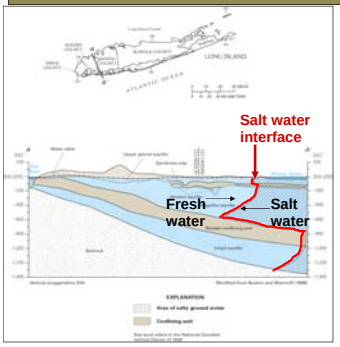
GROUNDWATER - part of the Hydrologic Cycle.
AQUIFER - zone of **saturated rock** through which water moves.
WATER TABLE - **top of the saturated zone**; varies with rainfall and pumping. When the water table intersects the surface, a lake, stream, marsh or spring is formed.

LI Groundwater Conditions





Groundwater: Saltwater Interface



The **saltwater interface** moves inland when freshwater **withdrawal** is greater than freshwater **recharge**.

Source: USGS Circular 1262

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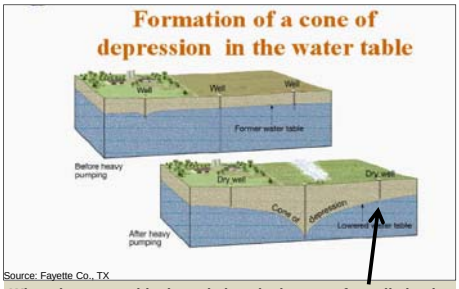
https://www.youtube.com/watch?v=8zxZUSVin10 2 min California example

Lowering of the **Water Table**



Source: Fayette Co., TX

When the water table drops below the bottom of a well, the dry becomes dry. To make the well wet again, either you have to stop pumping from nearby wells or you drill the well deeper.

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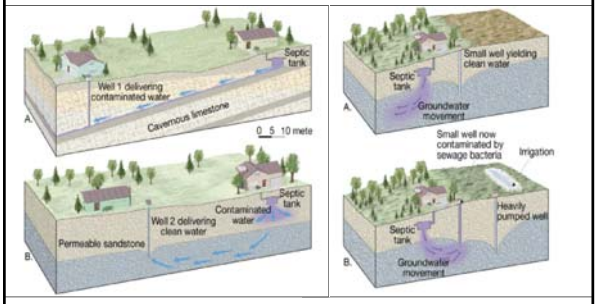
Groundwater Contamination from **Household Septic Tanks**



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