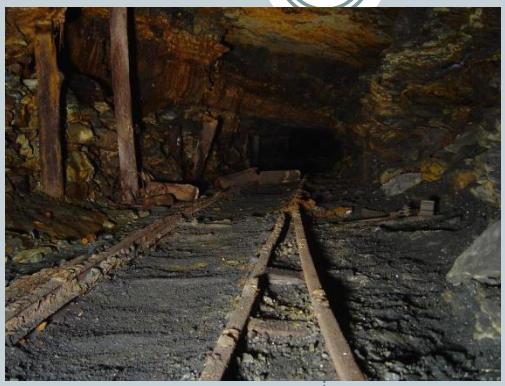
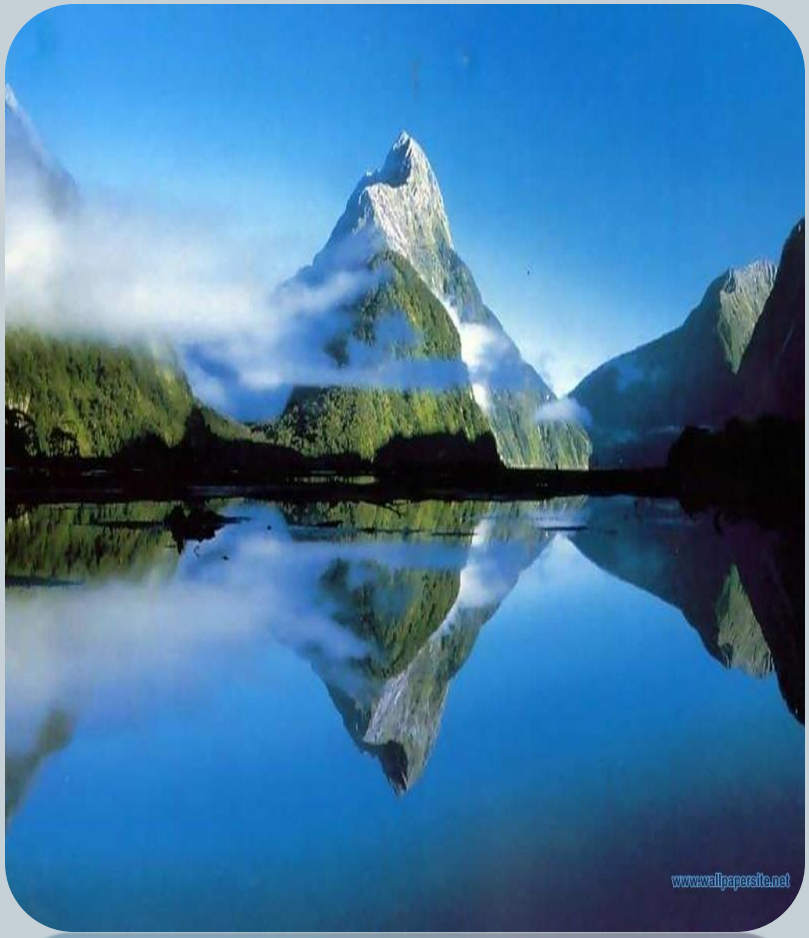
Chapter 14:How We Use Land

- Farming
- Mining
- Recreation
- Building cities
- Building highways



Land Cover -It is what you find on that plot of land.

- It could be……..
  - Forest
  - Rangeland
  - Cropland
  - Parks
  - Wetlands
  - Mountains
  - Desert
  - Urban

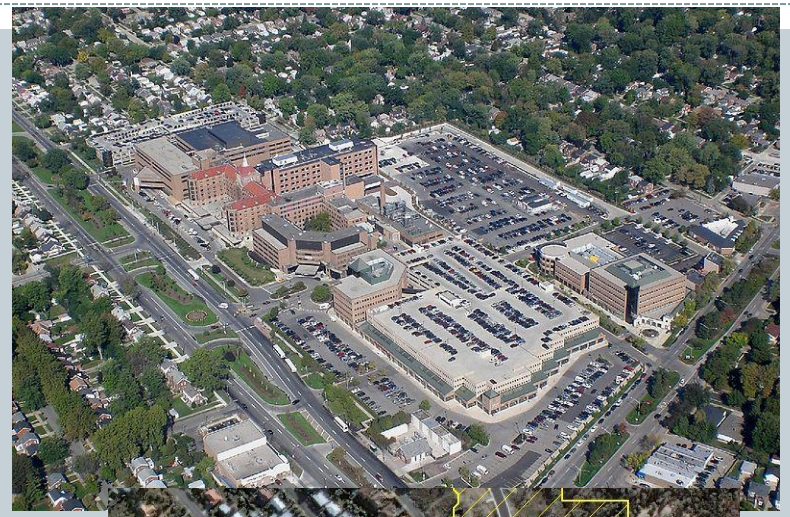


Urban Land

Land that is

- covered with buildings and roads
- contains at least 2,500 people
- usually has a governing body, such as a city council.

Urban Land



Rural Land

Land that

- contains relatively few people
- Has large areas of open space
- Any area not classified as *urban*

Rural Land

Where We Live

- Prior to 1850 most people lived in rural areas.
- Industrial revolution caused a movement of jobs and people from rural land to urban areas.
- Today- more people live in urban areas than rural areas.

The Urban-Rural Connection

- Cities depend on resources from rural areas, such as……
  - Clean drinking water
  - Fertile soil
  - Crops
  - Trees
  - Wood and paper

Ecosystem Services

- Resources that are produced by natural and artificial ecosystems. For example……
  - Prevention of floods
  - Maintenance of biodiversity
  - Cycling of nutrients
  - Regulation of climate

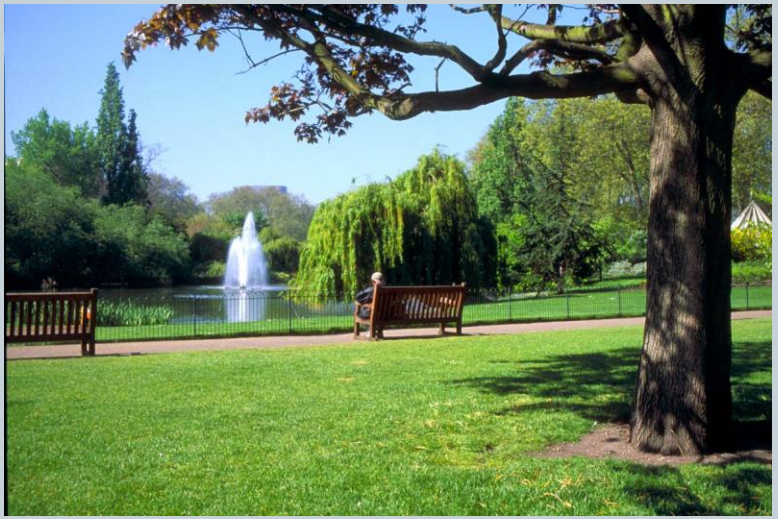
Chapter **14:Urban** Land Use (section 2)

- **Urbanization**- the movement of people from rural areas to cities
  - Has slowed in developed countries

Urban Land Use

- Slow growing areas usually nice places to live.
  - Traffic flows easily
  - buildings and parking lots are mixed with *green spaces* and recreation areas.

- These *green spaces* provide urban areas with **ecosystem services**



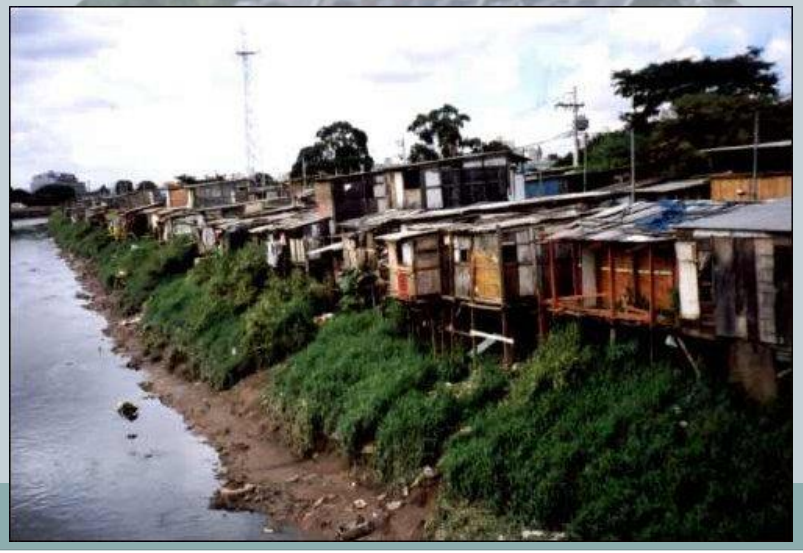
Urban Land Use

Some examples of the ecosystem services provided by green spaces are

- moderation of temperature
- infiltration of rainwater runoff
- aesthetic value

Urban Crisis

- Rapid growth can cause many problems, to include…
  - Traffic jams
  - Substandard housing
  - Polluted air and water



Infrastructure

All the things that a society builds for public use.

- Roads
- Bridges
- Buildings
- Schools
- Libraries
- Hospitals
- Power plants
- Water mains

Medical College of Georgia

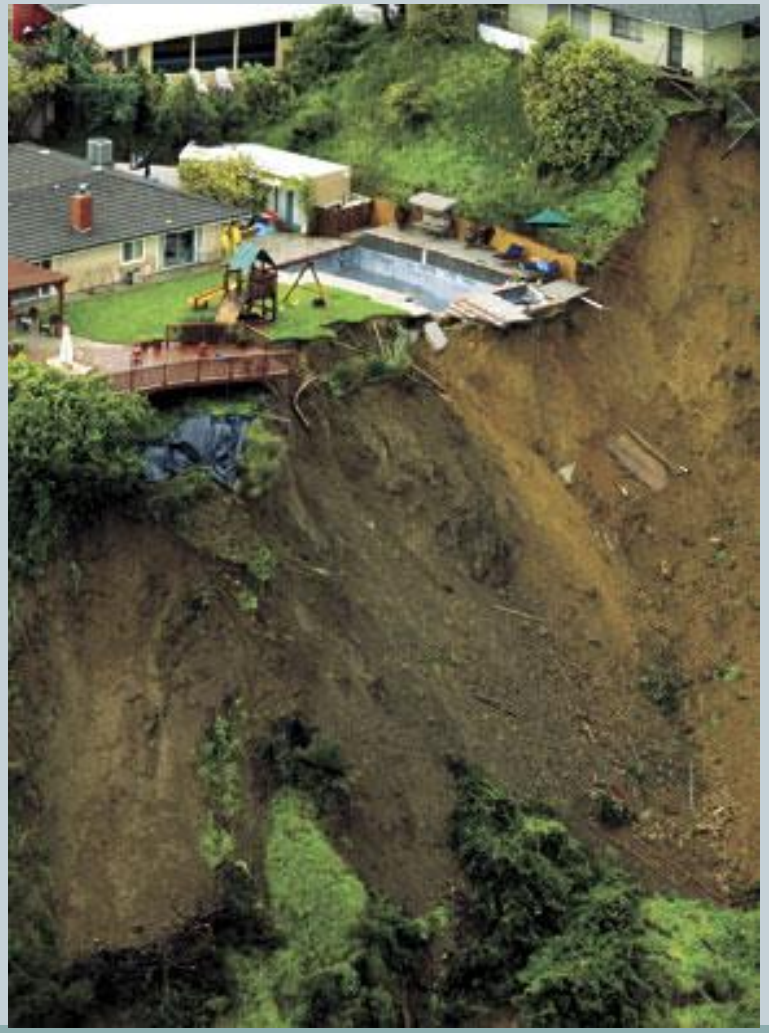
Urban Sprawl

- Rapid expansion of a city into the countryside that surrounds a city
- People commute to work
- Built on land previously used for food production

Marginal Land

- Land that is **poorly** suited for building
- Unsuitable because of the natural processes of erosion. Examples- L.A. and Mexico
- Structures built on *Marginal land* are difficult to repair and expensive to insure.

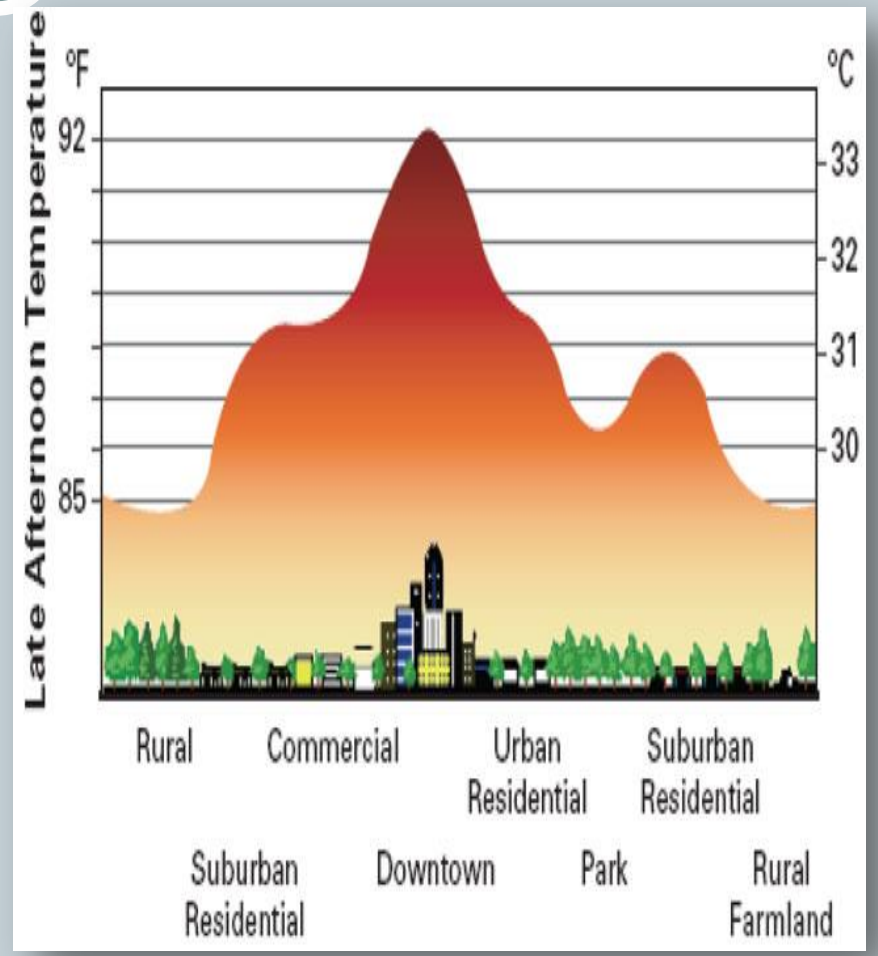
Marginal Land



Impact on the Environment by Urbanization

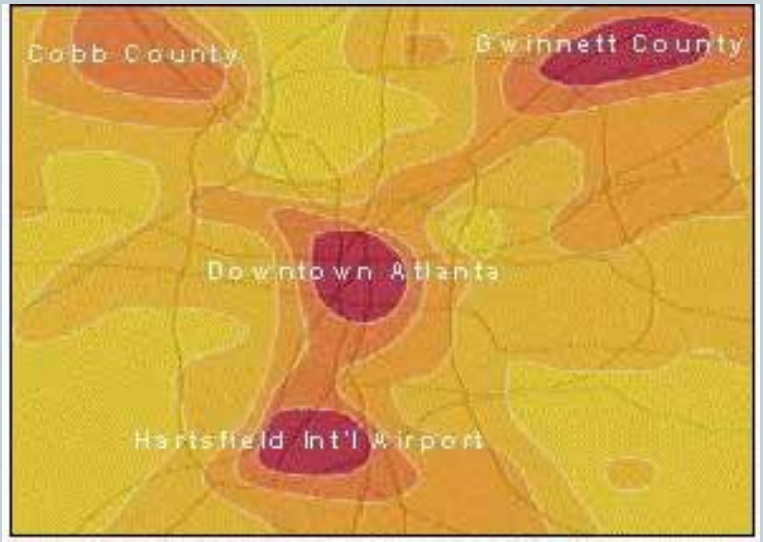
- Cities generate and absorb heat

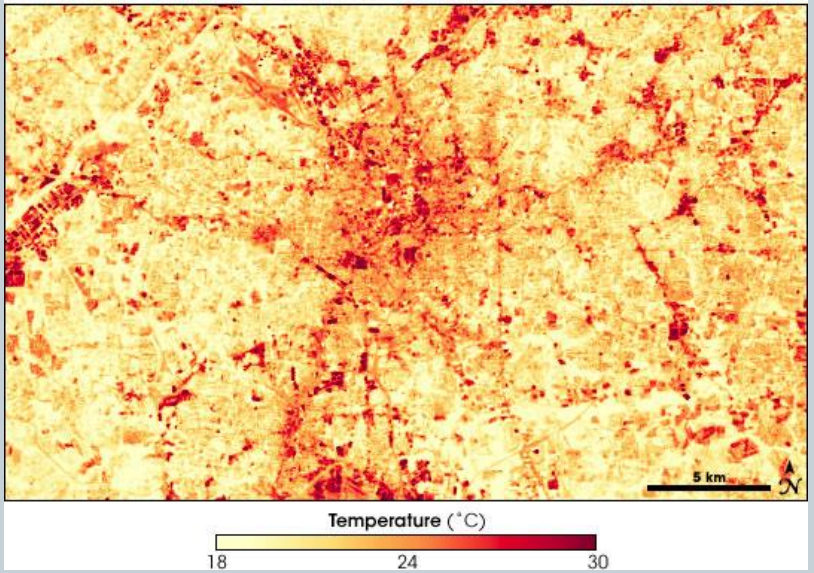
1. Heat Island- increase of temperature in a city
   - Can affect local weather patterns.
2. Increased rainfall results from heat island



Heat Island

Atlanta, Georgia is an example of a city with a significant heat island.





Urban Planning

- **Land-use planning-** determining in advance how land will be used
  - Is complex and at times controversial
  - Large projects that impact the environment are bitterly debated

"We need a new elementary school in Grovetown!"

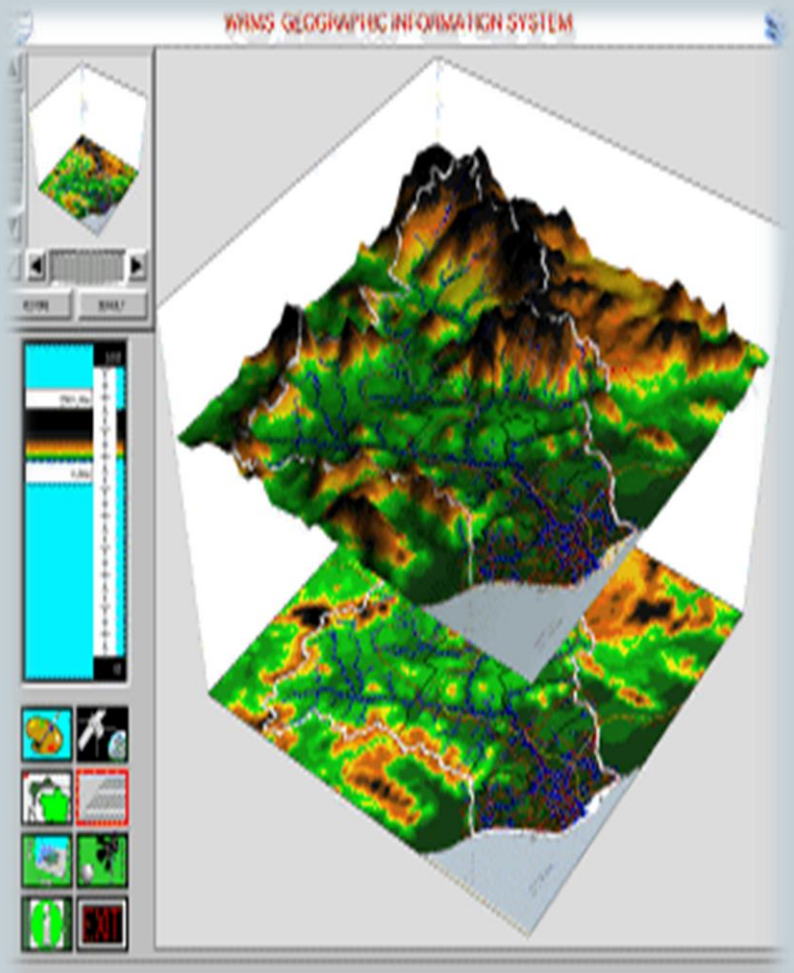
"We need a new landfill!"

"We need to set aside land to use for agriculture!"

"We need a new road connecting Wheeler Road & Washington Road!"

Technological Tools

- GIS- “Global information system”
- GIS- a computerized system for storing, manipulating, and viewing geographical data
- It allows a user to display layers of information about an area



Transportation

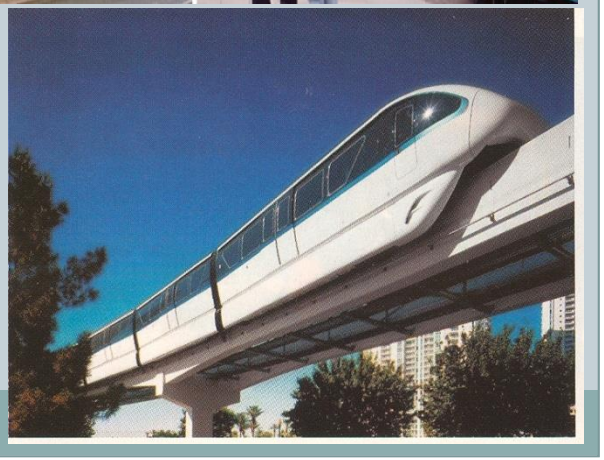
- Most cities provide *mass transit systems* which saves energy and reduces air pollution

- Mass transit systems: the use of buses and trains to move many people at one time

Mass Transit Systems

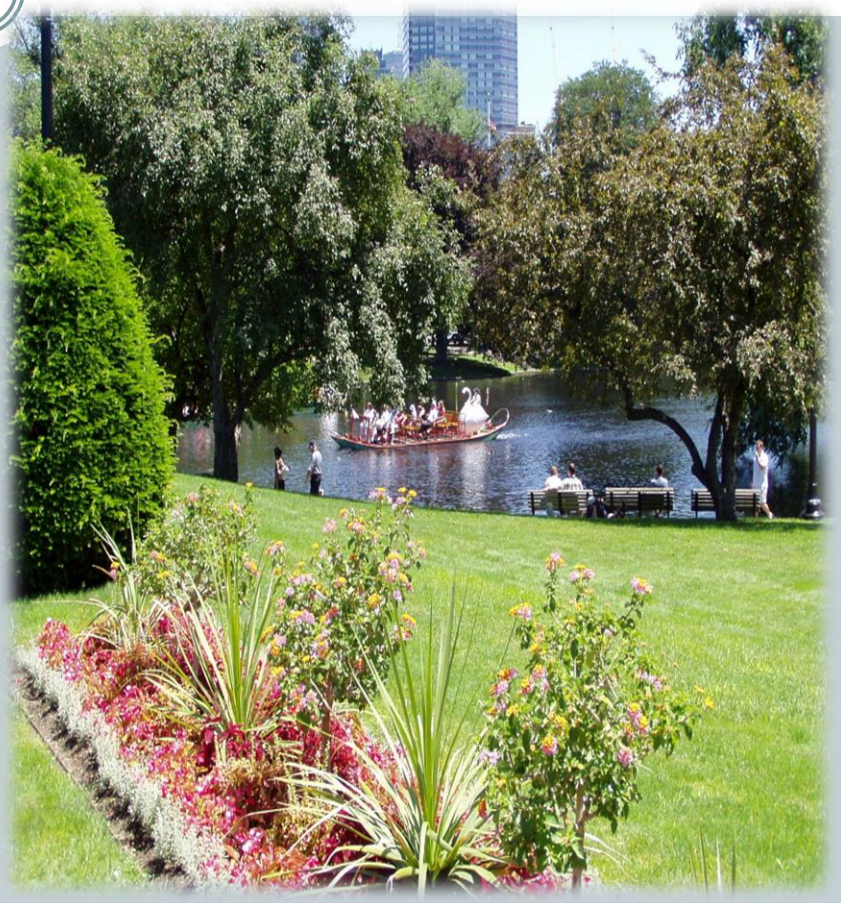
Impact of Mass Transit Systems:

- Save energy
- Reduce air pollution
- Reduce highway congestion
- Limit loss of land to roadways and parking lots



Open Spaces

- Land that is set aside for scenic and recreational enjoyment
- Numerous environmental benefits
  - plants absorb CO_2
  - reduce drainage problems by absorbing rain water
  - filter out air pollutants



Chapter 14: Land Management and Conservation (Section 3)

- Categories of rural lands
  1. Farmland
  2. Rangeland
  3. Forest land
  4. National parks
  5. Wilderness

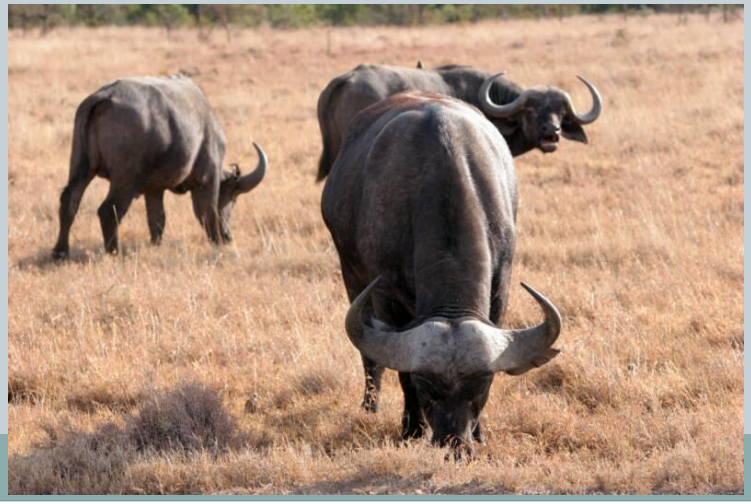
- It is important to maintain rural lands because of the ecological services that they provide to urban areas that rely on their productivity.

Farmlands

- Land used to grow crops
- Urban development threaten some of the most productive farm lands

Rangelands

- Land that supports different vegetation types like grasslands, shrub lands and deserts
- Commonly used for grazing of livestock
- Essential for maintaining world's food supply



Problems on the Range

- Overgrazing
- Results in changes in the plant community
  - Less desirable plants replace more-desirable plants
- Severe cases- all vegetation eaten and there is nothing to stop soil erosion

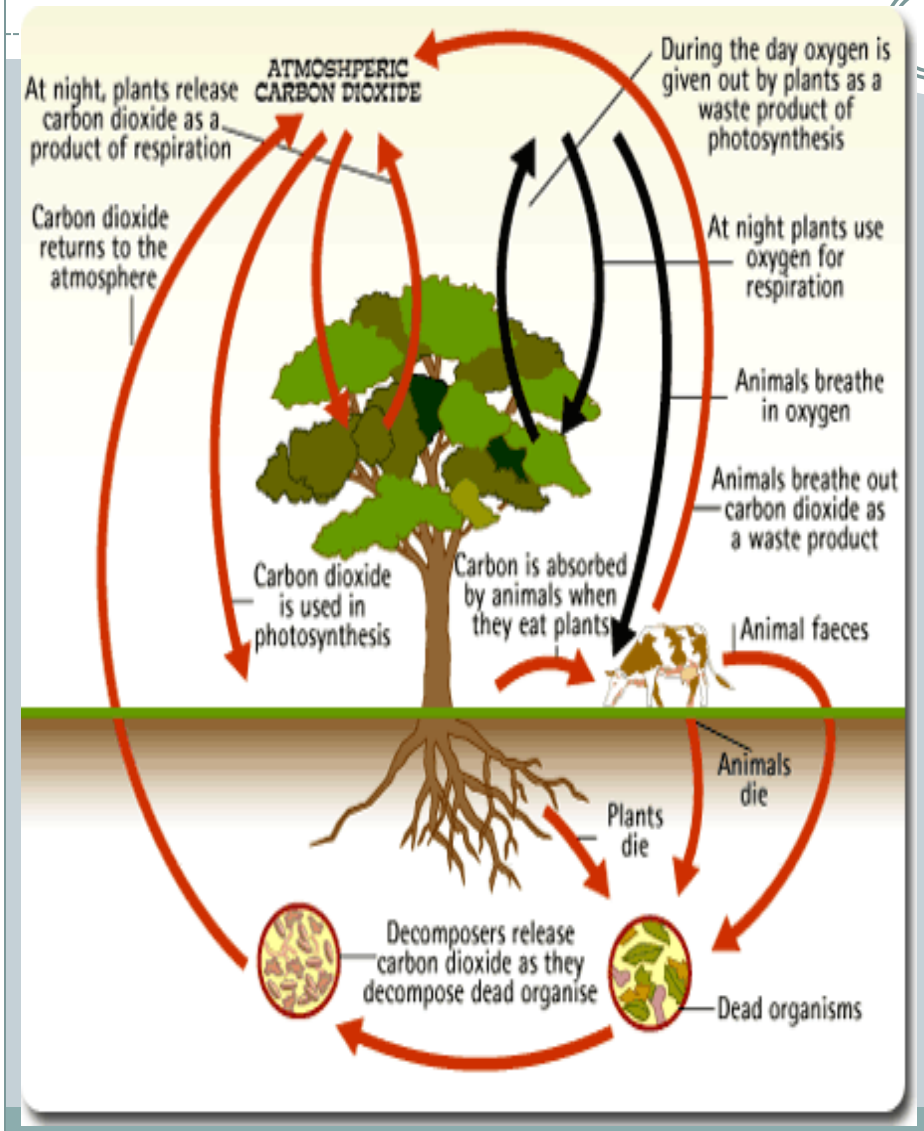
Maintaining the Range

- Reducing herd size and leaving rangeland unused for periods of time will help the rangelands to recover and sustain productivity

Forest Lands

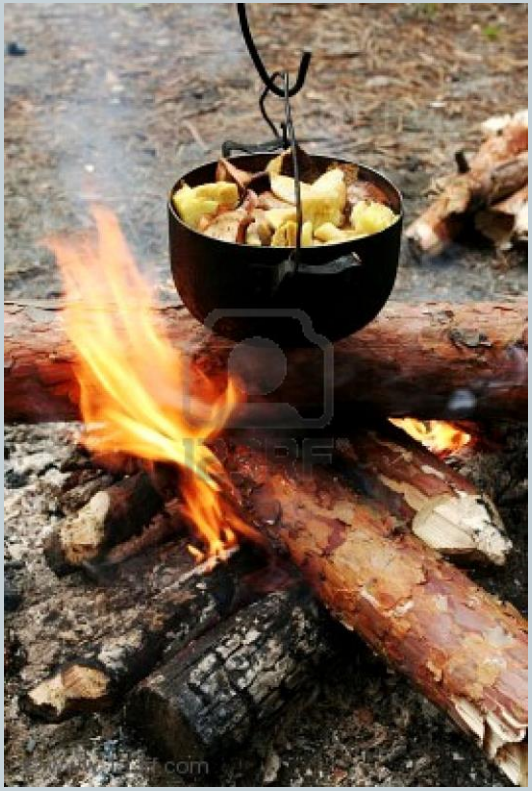
- Trees are harvested to provide us with many products, such as
  - Paper
  - Furniture
  - Plywood for homes
- They also provide us with many ecosystem services
- The most important services provided by forests is the removal of CO_2 in the air

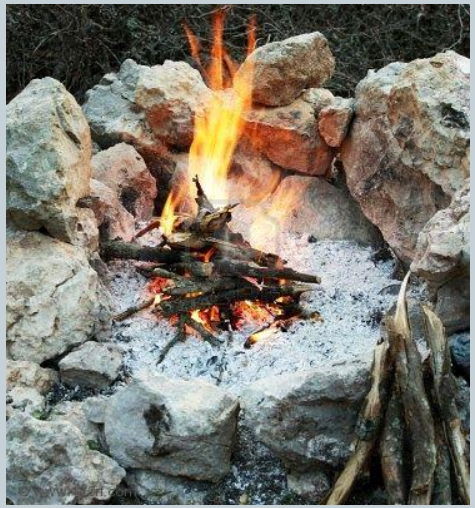
Forest Lands



Harvesting Trees

- People in developing countries use <u>firewood</u> as their main source of fuel





Forest Land

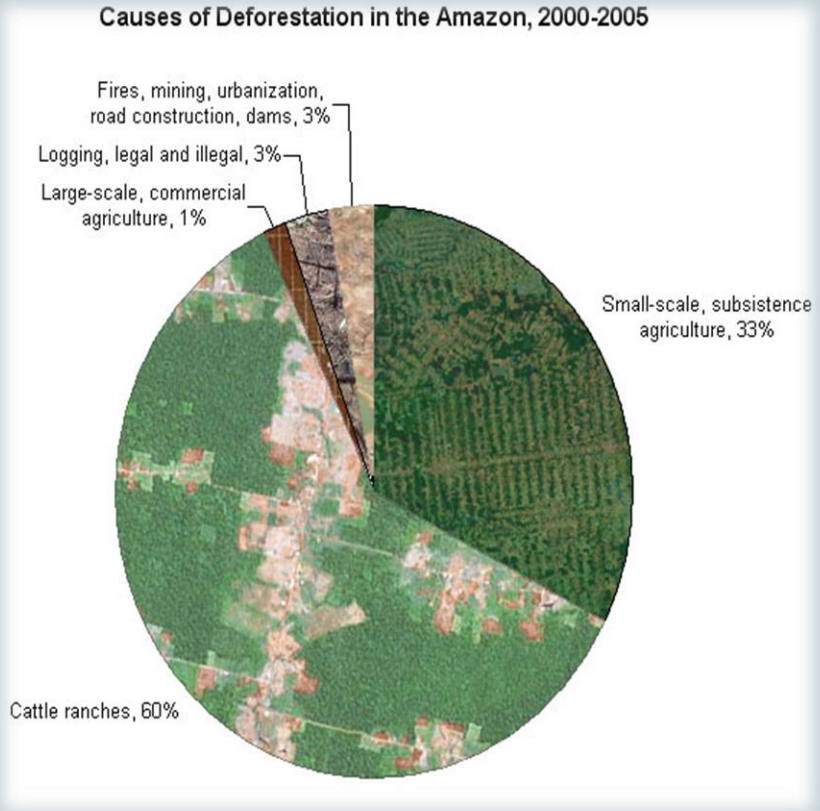
- Forest land is classified into 3 categories:
  1. Virgin forest- forest that has never been cut
  2. Native forest- forest that is planted and managed
  3. Tree farms- areas where trees are planted in rows and harvested like other crops

Harvesting Trees

- There are two methods used to harvest trees:
  1. **Clear- cutting-** removal of all trees from an area of land.
  2. **Selective cutting-** cutting and removing only middle-aged or mature trees.
- Selective method more expensive but, less destructive.

Deforestation

- Is the clearing of trees from an area without replacing them
- Rate of deforestation is high in tropical rain forests



Characteristics of Deforestation

- Population growth leads to deforestation
- Land mostly cleared to become farmland
- Reduces wildlife habitat
- Increases the rate of soil erosion

Characteristics of Deforestation

Erosion resulting from deforestation in Madagascar

Reforestation

- Process by which trees are planted to re-established trees that have been cut down in a forest land

The United Nations' Man and the Biosphere Program

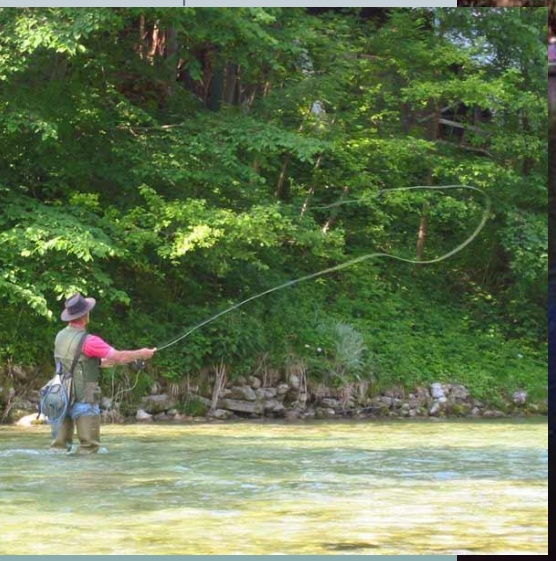
- This program has set up several hundred preserves throughout the world since 1976.

- These preserves are call *biosphere reserves and* are unusual in that <u>they include people in the management plan of the reserves.</u>

Wilderness

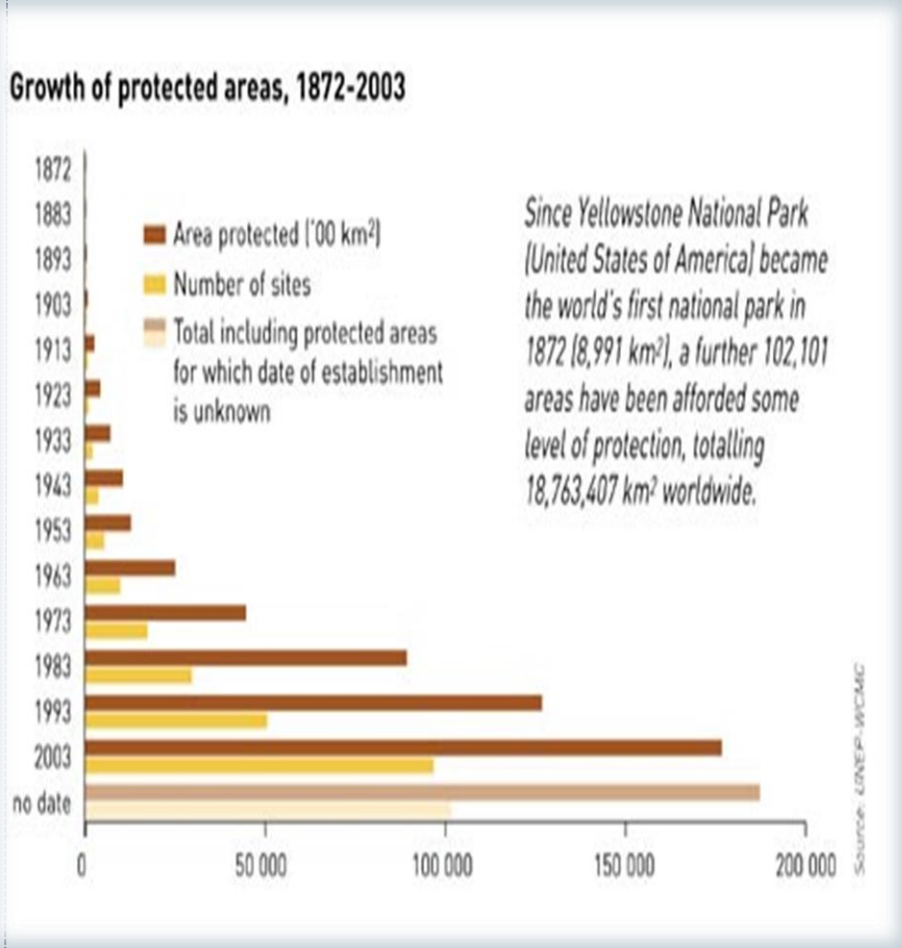
- An area in which the land and the ecosystems it supports are protected from all exploitation
- Wilderness areas are open to…
  - Hiking
  - Fishing
  - Boating (without motors)
  - Camping
- No roads or motorized equipment are allowed.

Wilderness



Protected Areas

- Benefits:
  1. Species are saved from extinction
  2. Unspoiled forest, deserts, and prairies exist
  3. Survival of plants and animals
  4. Provide recreation for people; hiking, camping etc…
  5. Outdoor research laboratories



Threats to Protected Areas

- Millions of people visit these protected areas each year and *leave their mark on the land*
- *Litter* and *traffic jams* at national parks
- *Mining*, *logging*, and *drilling* on rangelands

Parks and Preserves

- In the 1870's the first national park – Yellowstone- was created.
- Today the U.S has about 50 national parks.
- Most public lands are leased to private corporations for logging, mining, and ranching.