Urbanization

Most people used to live like this

Increasingly people live like this.

- For the first time in history, there are now more urban residents than rural residents.

Land Cover & Land Use

- Land cover influences land use
- Both can be altered by humans → building of urban areas

- Land cover = vegetation and manufactured structures that cover land
  - Trees, grass, crops, wetlands, water, buildings, pavement
  - Determined by USGS (U.S. Geological Survey)

Land Cover & Land Use

- **Land use** = human activities occurring on land
  - Farming, grazing, logging, mining, residential and industrial development, recreation
- land use depends on land cover

Land Cover or Land Use?

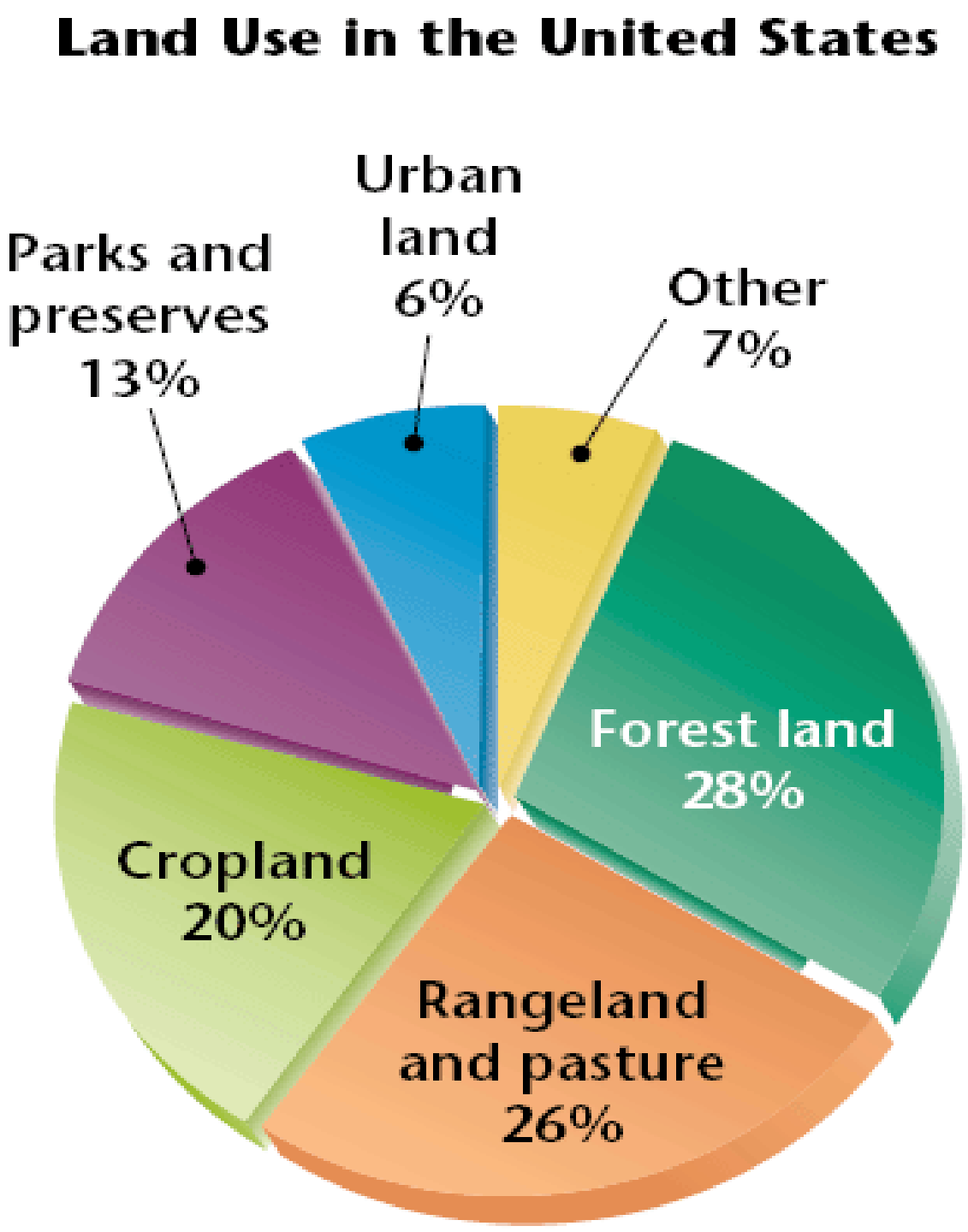
- Grazing livestock
- Forest land
- Harvesting wood, wildlife, fish, etc.
- Recreation; preservation of native animal and plant communities and ecosystems
- Cropland
- Parks and preserves
- Wetlands, mountains, deserts
- Residences, others buildings, and roads
- Growing plants for food and fiber

Land Use

- Land cover of an area changes over time
- Ex: grasslands altered by rangeland and croplands
- Ex: deciduous forest lands replaced by cities and industrial areas

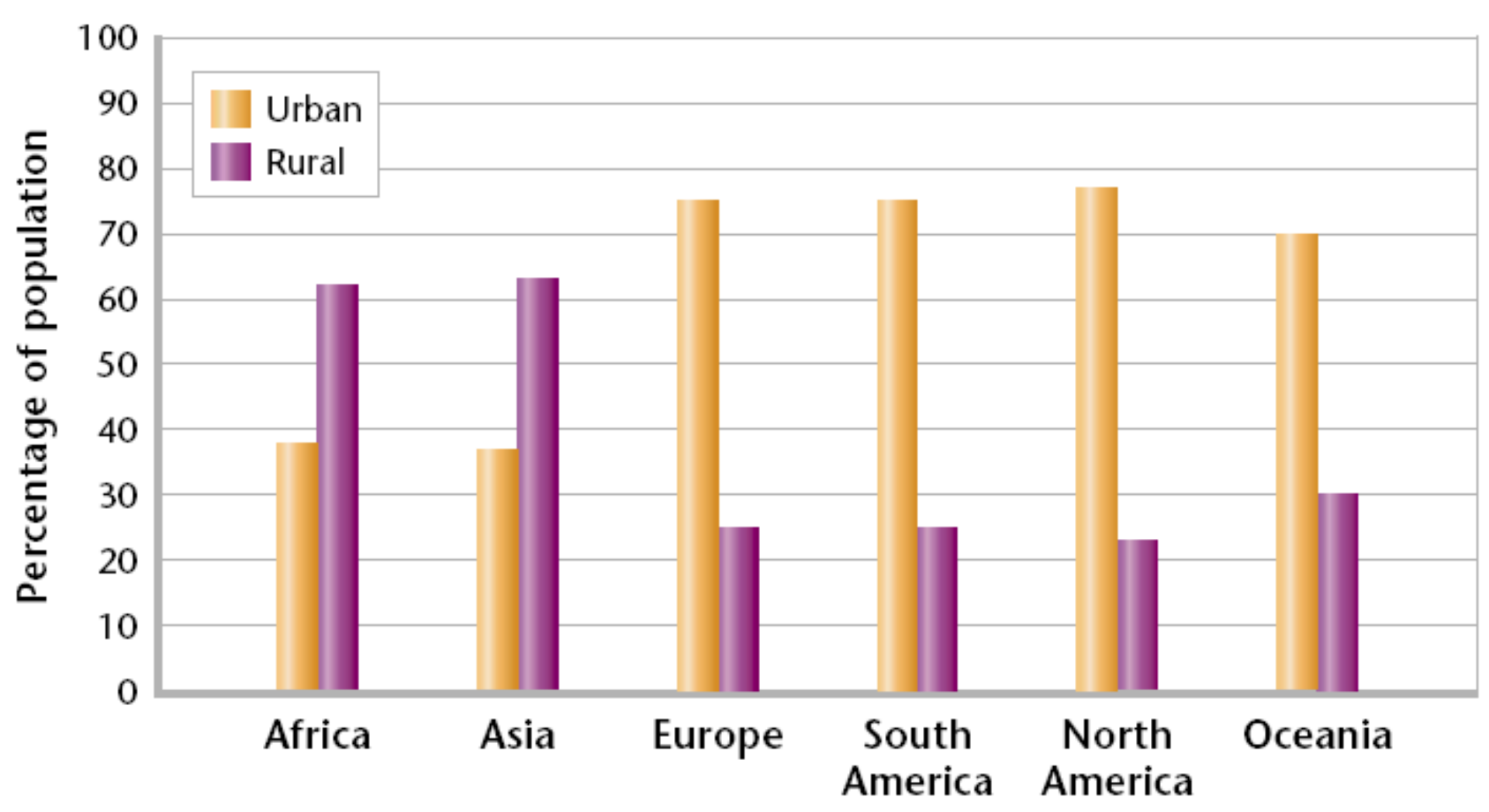
USGS Studies…

- Land cover scientists = monitor how – and how rapidly – land cover changes
- Also study:
  - economic impacts of land cover change
  - effects of water quality
  - spread of invasive species
  - habitat and biodiversity loss
  - climate change



What does this pie chart tell us?

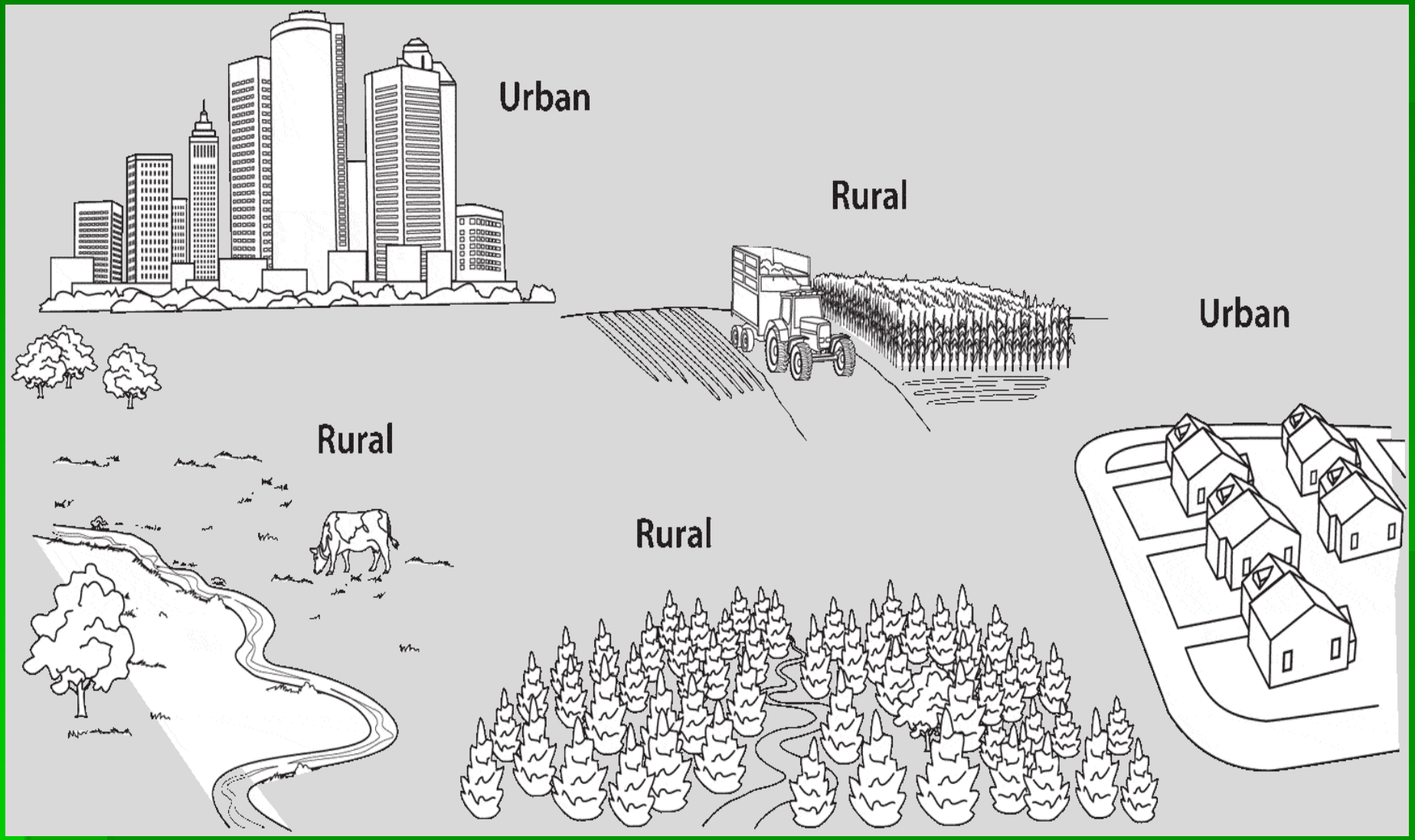
What is largest land use in U.S.? Smallest?

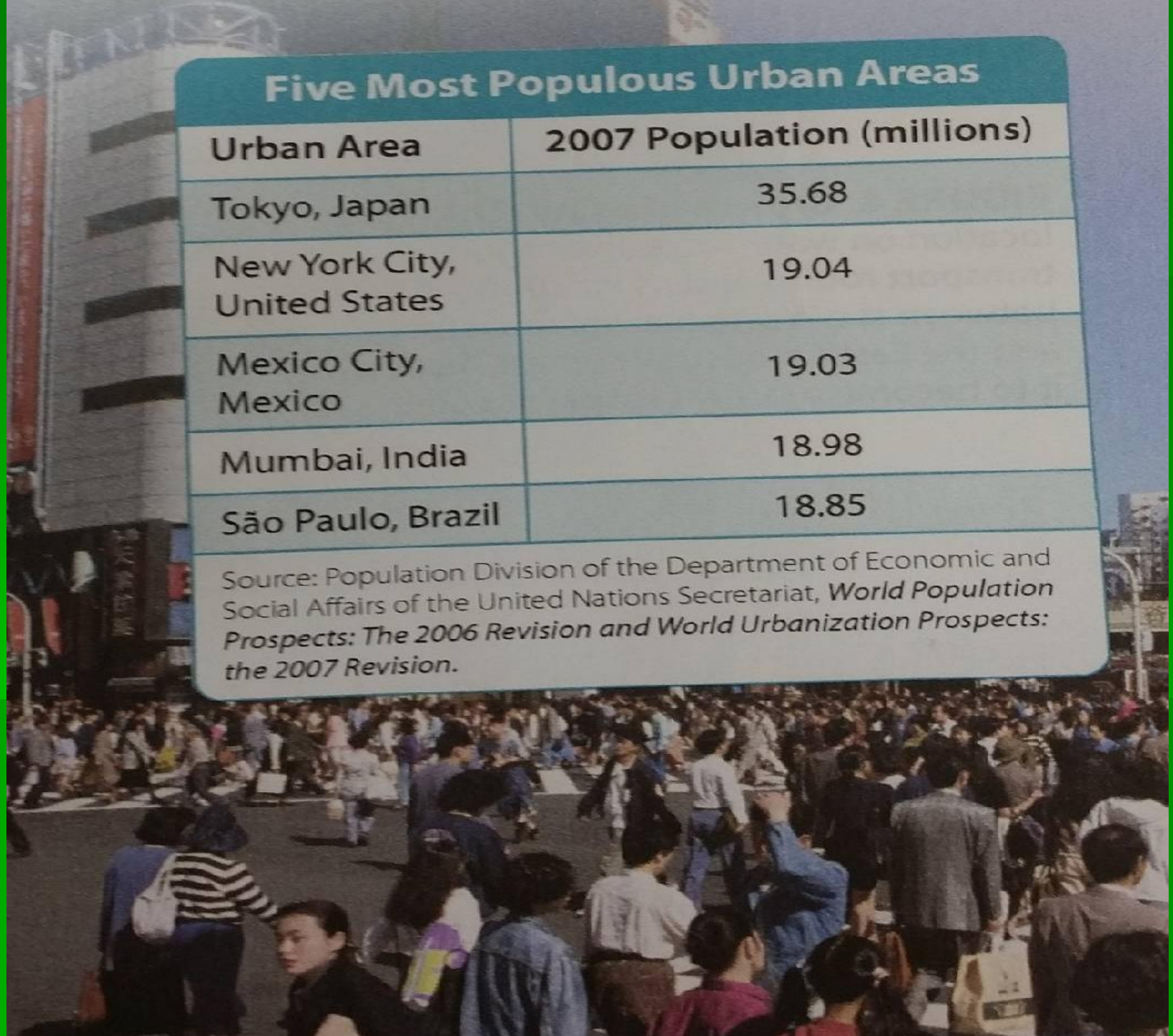


What do these bar graphs show us?

Urban vs. Rural

- Category of land cover and land use
- Urban area = mostly developed land cover mainly with buildings and roads that have human population of 2500 or more
  - AKA: towns, cities
  - Suburbs = smaller towns or cities that are outside a large city but still within the urban area
- Rural area = “the country” sparsely populated area


Urban
Rural
Urban
Rural
Rural



Five Most Populous Urban Areas

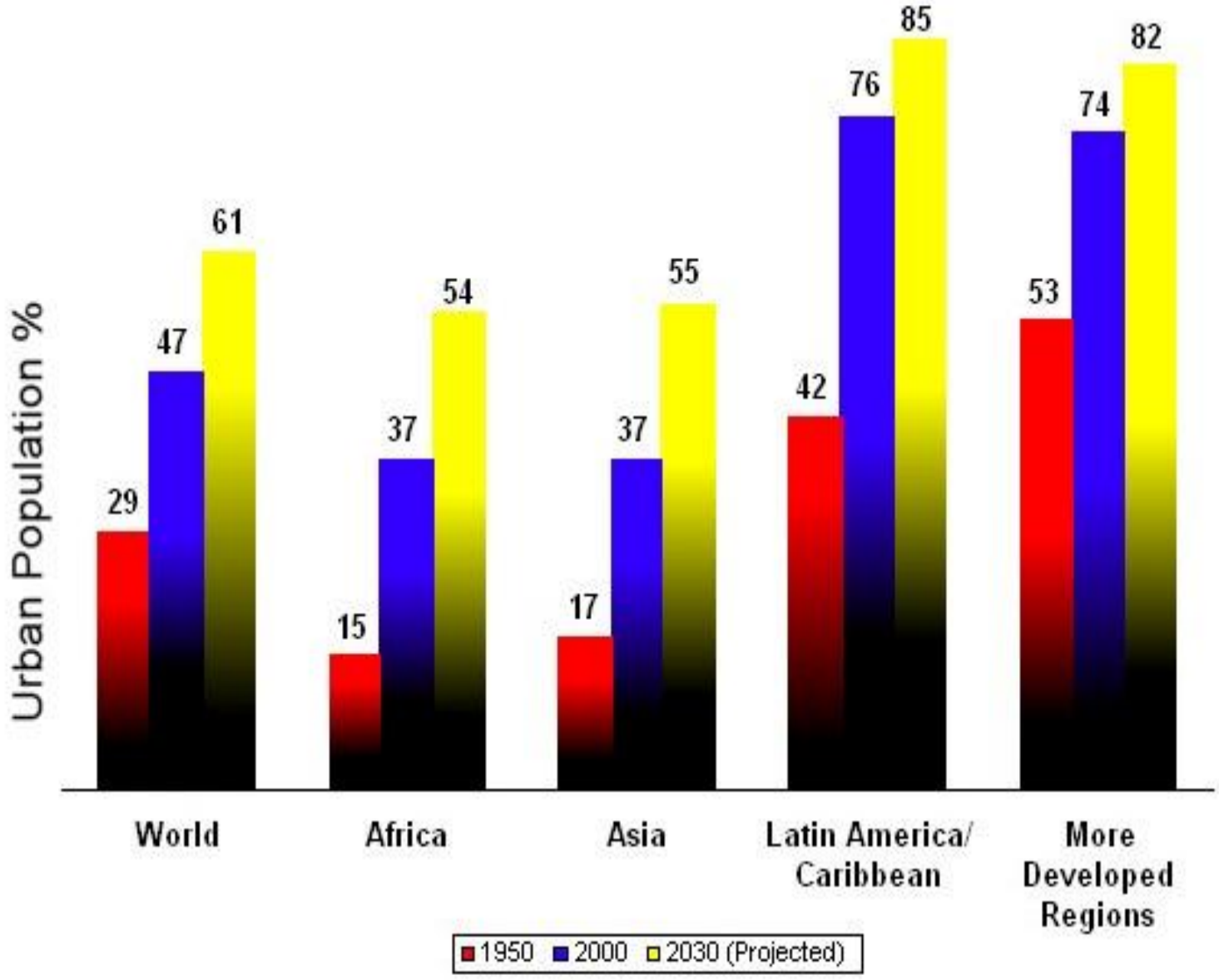
Urban Area	2007 Population (millions)
Tokyo, Japan	35.68
New York City, United States	19.04
Mexico City, Mexico	19.03
Mumbai, India	18.98
São Paulo, Brazil	18.85

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2006 Revision and World Urbanization Prospects: the 2007 Revision.*

Urbanization

- Occurs when people move from rural areas to cities
- More than 20 cities have at least 10 million residents.
- What encourages people to build – or move to – huge cities?
  - MAKE A LIST in your notebooks!

Trends in Urbanization by Region, 2003.



Source: United Nations, World Urbanization Prospects.

Why are people moving to cities and leaving rural life behind?

SHOULD WE CARE?

Urbanization

- Urban population is growing due to:
  - human population growth
  - people moving from farms to cities (rather than cities to farms)
- UN projects that urban population will double again by 2050 (quadrupled since 1950)

- Urbanization = shift of population from countryside to urban areas

U.S Statistics

- More urbanized than the world average
- In 1950: @ 65% of population was urban
- Today: @ 80% of population is urban

Urban

- Often have public transportation
- Buildings are closer together
- Buildings are built higher up
- Areas are highly populated/dense

Location of Urban Cities

- Location is essential to growth of an urban area
  - Moderate climate
  - Central geography
  - Ease of transportation

small town → large city

- Near water, railroads, and/or highways

Suburban

- Often commute to cities for work
- Buildings are lower and farther apart than cities
- Areas are not as populated as cities, yet they still may offer services such as: schools, health care facilities, public works

Rural

- 50 million people live in rural areas
- Structures are far apart
- Some rural communities share hospitals or schools
- Far away from urban areas
- Examples include farmland, woodland, forests, plains, deserts, prairies

Urbanization:

- Consider the city we live in. Research its growth online. What geographical, social, or political factors helped it grow?

- Canfield is a suburb of Youngstown
- www.biggestuscities.com/city/youngstown-ohio
- Or: /canfield-ohio

HOMEWORK (continued)

- Overall population
- Nationwide rank
- _____ largest city
- Peak recorded population and how it has changed
- Is growth above/below average
- Study population history line graph

DAY 2 MATERIAL

Urban Environmental Impacts

- Cities have both negative and positive impacts on the environment
- Jot down in the whiteboards some potential negative and positive impacts of cities or “urban areas”

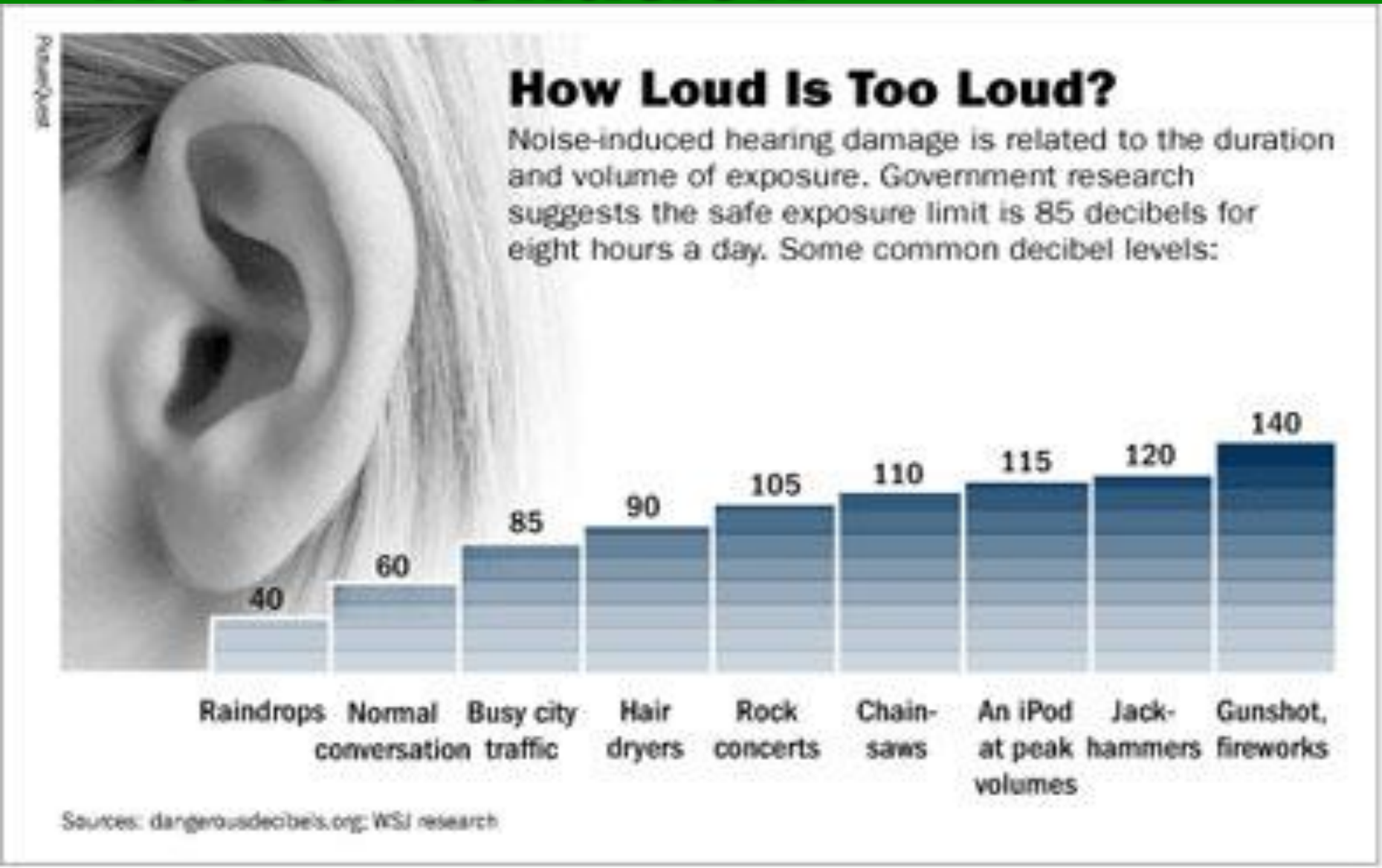
Environmental Costs of Urbanization

Pollution: Increased waste, industrial byproducts, noise pollution, light pollution

- What is noise pollution? Light pollution?

Noise Pollution

Noise pollution – undesired background noise (ex: traffic)



Light Pollution

Light pollution – city lights: obscures stars and planets

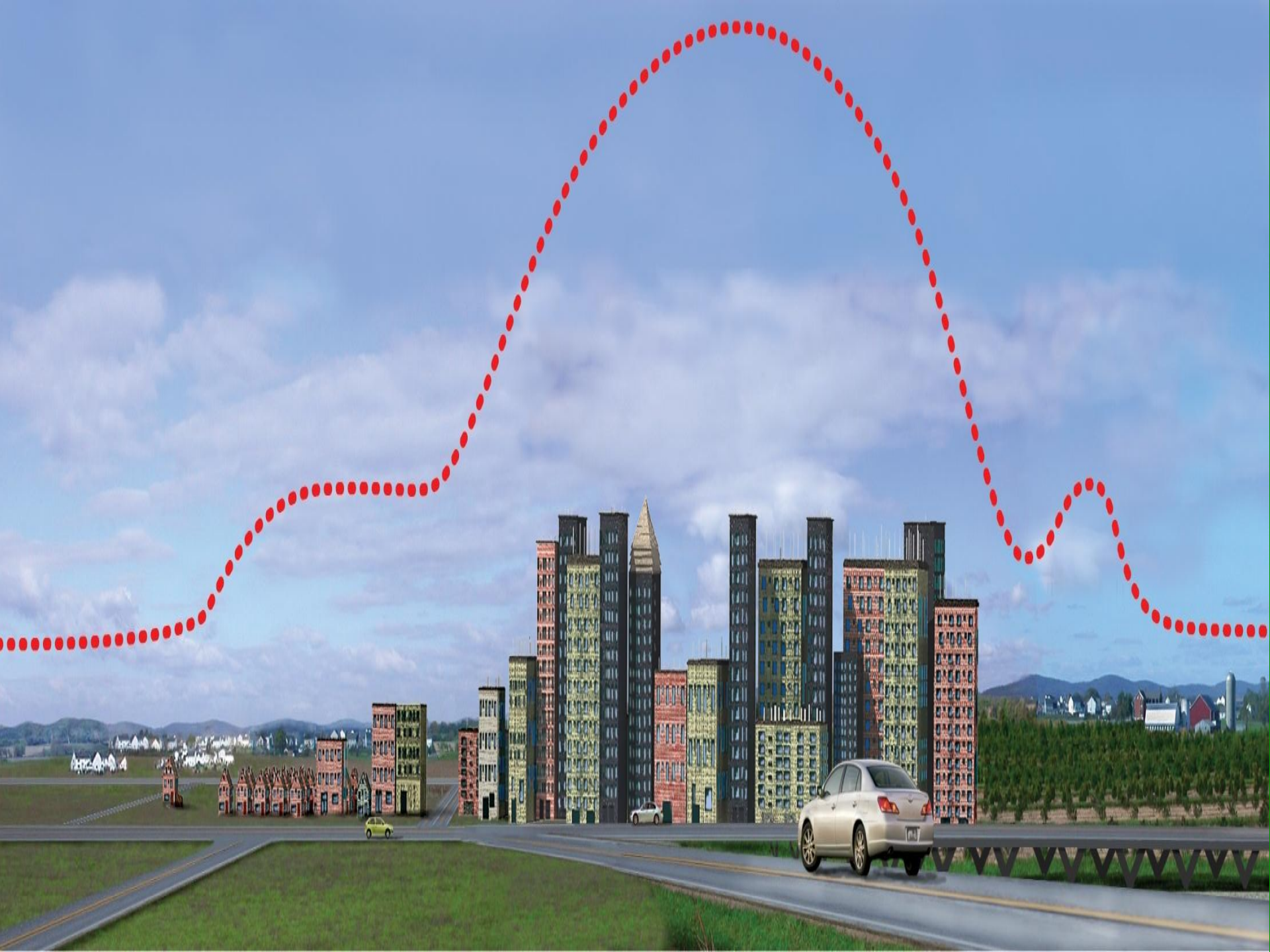
Heat Islands

- When people move into an area, create an infrastructure
- Infrastructure = made up of facilities, services, and installations needed for the functioning of a community → transportation, communication systems, water, power, schools
- Environment/surface transitions from permeable to dry and impermeable (ex: pavement) → warmer areas result!

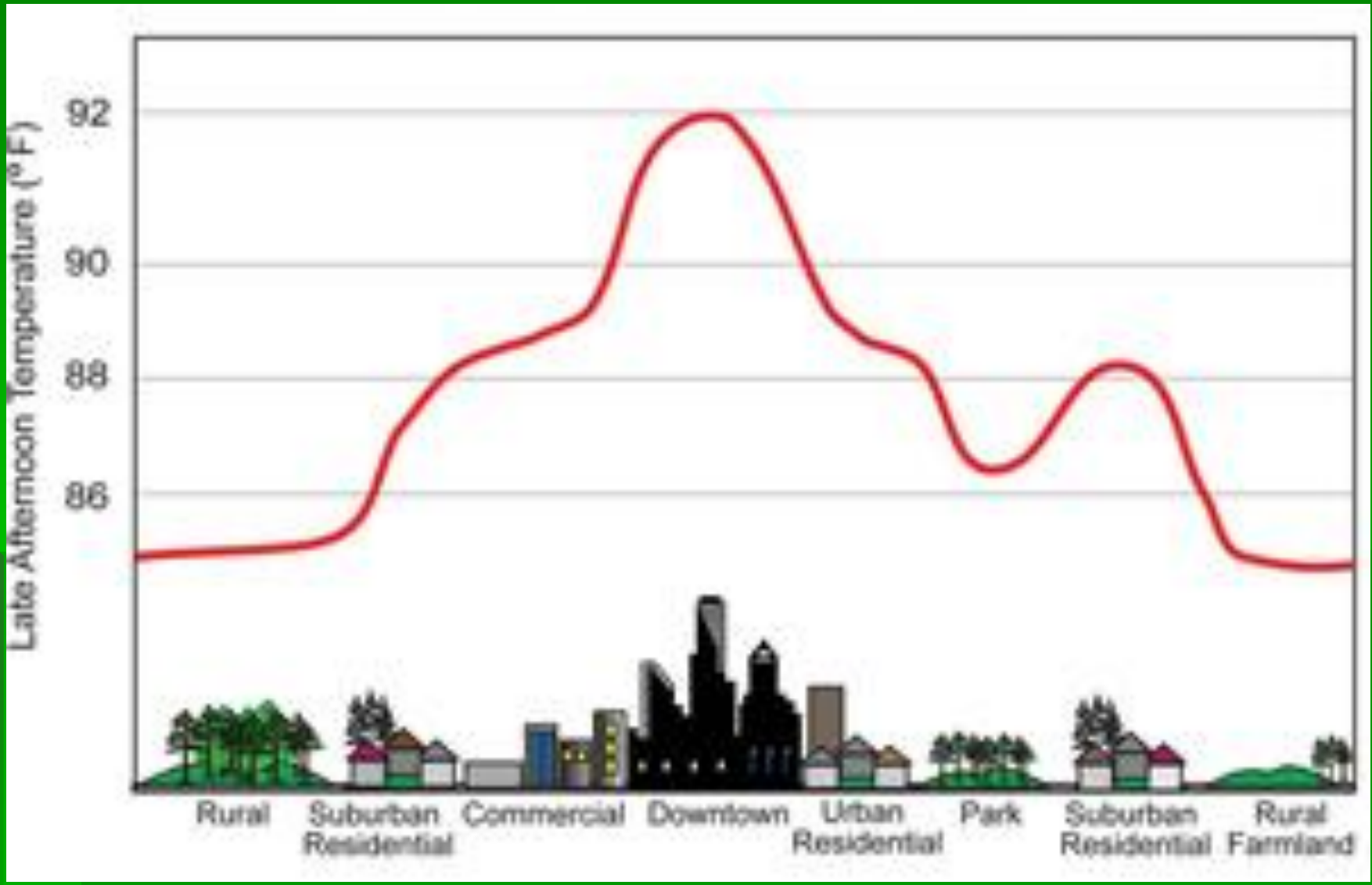
Environmental Costs of Urbanization

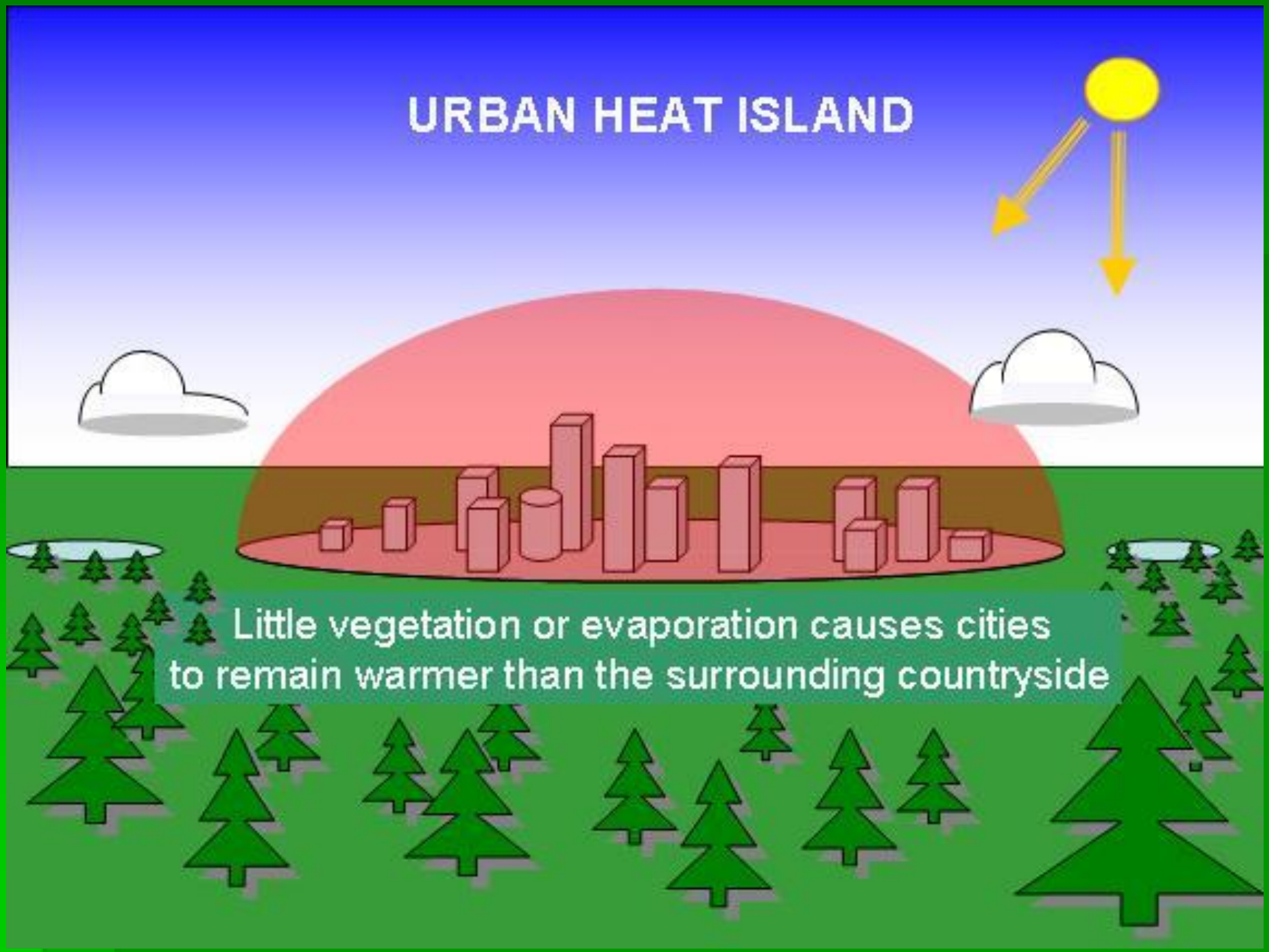
- Heat islands:
  Cities, several degrees warmer than surrounding areas, affect local weather and trap pollutants
- “island of hot air”

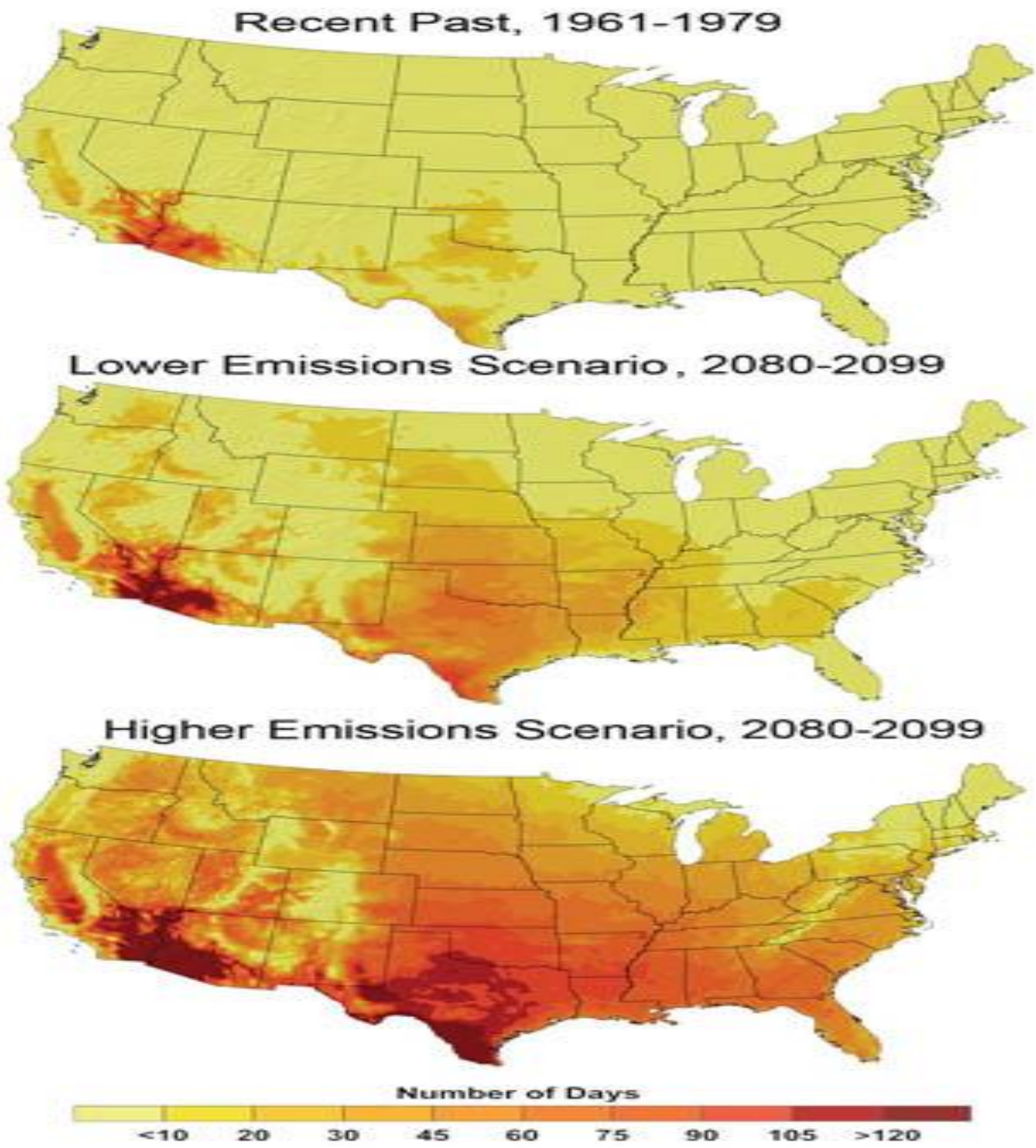
WHY?



Heat Island


Late Afternoon Temperature (°F)
92
90
88
86
Rural
Suburban Residential
Commercial
Downtown
Urban Residential
Park
Suburban Residential
Rural Farmland


URBAN HEAT ISLAND
Little vegetation or evaporation causes cities
to remain warmer than the surrounding countryside


Recent Past, 1961-1979
Lower Emissions Scenario , 2080-2099
Higher Emissions Scenario, 2080-2099
Number of Days
<10
20
30
45
60
75
90
105
>120

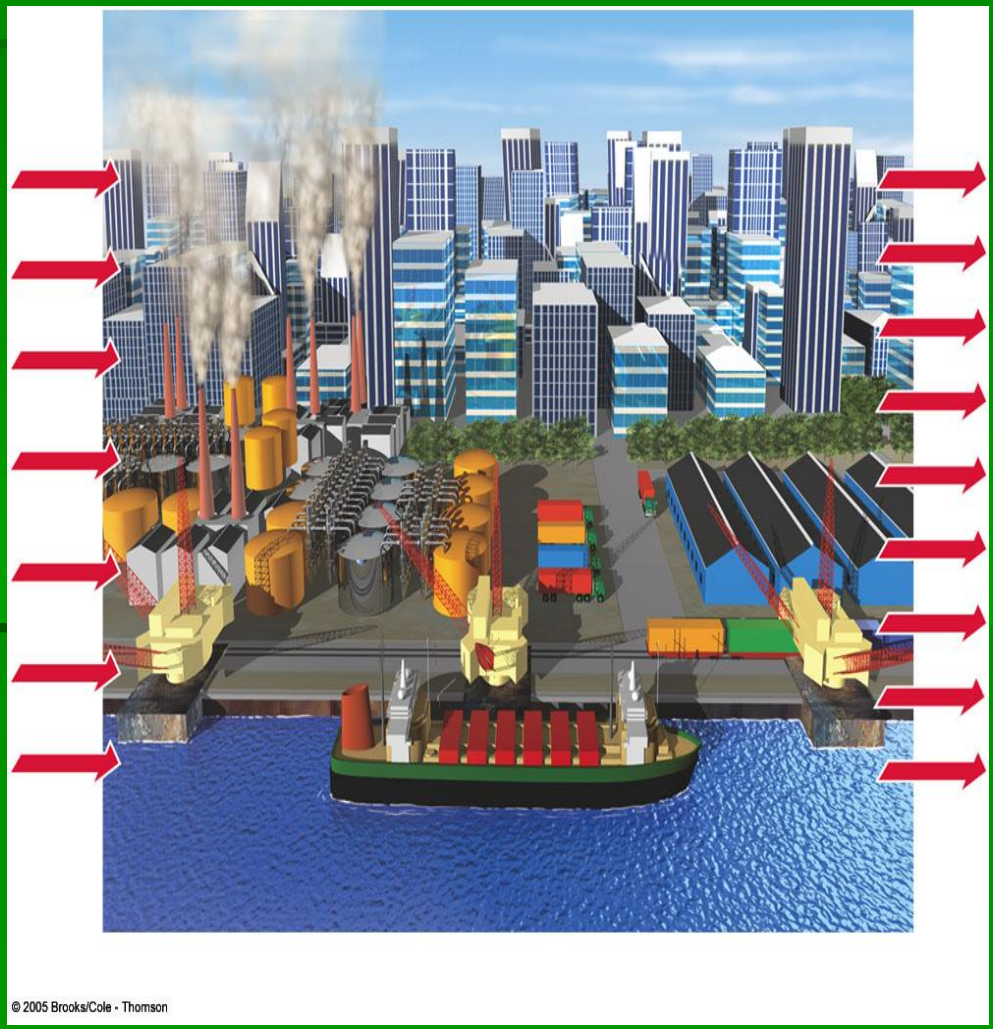
Heat Islands

- Can affect:
  - Increased energy demand
  - Air pollution and greenhouse gas emissions
  - Heat-related illness and mortality
  - Water quality (aquatic ecosystems)
  - Local weather

What can cities do to reduce this impact?

Environmental Costs of Urbanization

- Imported resources: Fossil fuels are burned to import food, water, fuel, and raw materials.



Environmental Benefits of Urbanization

- What do you think are some environmental benefits if cities?

Environmental Benefits of Urbanization

- **Efficiency:** Less fuel and resources needed to distribute goods and services to residents
- **Universities and research centers:** Urban areas tend to foster education and innovation.
- **Land Preservation:** Dense urban centers leave room for agriculture, wilderness, biodiversity, and privacy.

Ecological Footprints

- Since cities require outside resources, footprints tend to be greater than actual land area
- Average urban resident > footprint than average rural resident
  - Urban/suburban residents tend to be wealthier
  - Wealth and resource consumption = closely related!