**(AP) ENVIRONMENTAL SCIENCE 2022-23 January 27, 2023**

**Today’s Agenda (Day 97)**

1. Housekeeping Items

🡪 BRING:

1. Homework Check:

🡪 Chapter 11 Reading Guide

🡪 Lab: Strip Mining

🡪 Lab: Cookie Mining

1. Class Activity:

🡪 Day 16: Science Fair

\*Finalize Experimental Setup – Gather all materials, prepare all supporting apparatus

\*CONT’D - your experiment

🡪DAY 4: Chapter 11 PPT Review

1. ~~Section 11.1 – Biodiversity Loss and Extinction~~
2. **Section 11.2 – The Value of Biodiversity**
3. Section 11.3 – Threats to Biodiversity
4. Section 11.4 – What is Being Done to Preserve Biodiversity

HOMEWORK:

* READ: Chapter 11 – Biodiversity Issues
* COMPLETE:
* **STUDY**: Chapter 11 Vocabulary Quiz and Test

Chapter 11 Vocabulary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Aquaculture | Bioprospecting | Biodiversity | Bush meat | Clear-cutting | Convention on Biological Diversity |
| Convention on International Trade in Endangered Species (CITES) | Cover | Deforestation | Desertification | Ecosystem diversity | Endangered species |
| Endangered Species Act (ESA) | Endemism | Extinction | Genetic diversity | Habitat loss | Habitat management |
| International Union for Conservation of Nature and Natural Resources (IUCN) | Migratory birds | Overexploitation | Patchwork clear-cutting | Rangeland | Reforestation |
| Selective breeding | Species diversity | Threatened species |  |  |  |

REMINDER

* **TEST: Ch 11🡪 ~~Thursday, Jan. 26~~ Jan. 31**

Chapter 12 Vocabulary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Brownfields | Brownfields development | Floodplain zoning ordinances | Floodplains | Infrastructure | Land-use planning |
| Megacity | Megalopolis | Ribbon sprawl | Tract development | Urban growth limit | Urban sprawl |
| Wetlands | zoning |  |  |  |  |

Chapter 13 Vocabulary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Asthenosphere | Chemical weathering | Conservation tillage | Contour farming | Crust | Erosion |
| Friable | Horizon | Humus | Hyperaccumulators | Land | Leaching lithosphere |
| Litter loam | Mantle  | Mechanical weathering  | Parent material | Phytoremediation | Plate tectonics |
| Reduced tillage | Soil | Soil profile | Soil texture | Strip farming  | Terraces  |
| Waterways | Weathering  | windbreaks |  |  |  |

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDECHAPTER 11**

REVIEW QUESTIONS

1. Name three ways humans directly alter ecosystems.

2. Why is the impact of humans greater today than at any time in the past?

3. Describe three factors that influence the genetic diversity of a population.

4. Describe three major causes of the loss of biodiversity.

5. What are the major causes of biodiversity loss in marine ecosystems?

6. List three problems associated with forest exploitation.

7. What is desertification? What causes it?

8. List three key components of the Convention on Biological Diversity (biodiversity treaty).

9. List six techniques utilized by wildlife managers.

10. What special problems are associated with waterfowl management?

11. What is extinction, and why does it occur?

12. List three examples of ecosystem services provided by biological resources.

13. List three actions that can be taken to prevent extinctions.

14. Describe the relationship between habitat needs of a species and the overall survival success of the species.

15. Describe the role of the Red List of Threatened Species in species conservation.

CRITICAL THINKING QUESTIONS [for APES students only]

1. Perhaps 98 percent to 99 percent of all species that have ever existed are extinct. Nearly all went extinct long before humans arrived on the scene. Why should we be concerned about the extinction of organisms today?

2. Would you support clearing of forests and plowing of grasslands that are ecologically important in order to support agriculture in countries that have significant hunger? Where do you draw the line between preserving ecosystems and human interest?

3. A Pacific Northwest Native American tribe has been permitted to hunt an endangered whale species to preserve its traditional culture and uphold its treaty rights. Now there is fear that other countries will hunt the whales, too. Do you think the tribe should be denied its rights? Why or why not?

4. Pharmaceutical companies are helping some developing countries to preserve their rainforests so these companies can look for organisms with possible pharmacological value. How do you feel about these arrangements? What limits, if any, would you place on the pharmaceutical companies? Why?

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDECHAPTER 12**

REVIEW QUESTIONS

1. List three reasons why land-use planning is necessary.

2. Why did urban centers develop near waterways?

3. List three factors that encouraged people to move from rural farms to cities in the 1800s.

4. List three factors that encouraged people to leave the cities for suburbs.

5. List three physical and three social consequences of suburban sprawl.

6. Describe tract development, ribbon sprawl, and leapfrog development.

7. What is a megalopolis?

8. Describe how each of the following factors contributed to the development of suburban sprawl: automobiles, home ownership, tax laws, local zoning ordinances, federal government policies.

9. State three consequences of the dominance of the automobile as a means of transport in urban areas.

10. What characteristics of suburbs contribute to a loss of sense of community?

11. What characteristics of suburbs contribute to high infrastructure and high energy costs?

12. How does the development of suburbs around a city contribute to loss of open space, and air and water pollution problems?

13. What land uses are suitable on floodplains?

14. Describe three values provided by wetlands.

15. Why is an understanding of the geology and resource base of an area important in land-use planning?

16. List eight principles that should be involved in good land-use planning.

17. What role do state and regional planning, purchasing of land, and use restrictions play in implementing land-use plans?

18. Describe three common land-use issues cities must deal with.

19. List ten common smart growth principles.

20. List four major federal agencies that manage federal lands and their primary responsibilities.

21. Give examples of conflict over the use of federally owned property.

CRITICAL THINKING QUESTIONS [for APES students only]

1. Choose the city where you live. Interview local residents and look at old city maps. What did the city look like 75 years ago? What were the city’s boundaries? Where did people do their shopping? How did they get around? How does this compare with the current situation in the city?

2. What historical factors brought members of your family to the city? How does this compare to the factors that are currently contributing to the growth of cities in the developing world?

3. Consider the outer rim of the city closest to you. Which, if any, of the problems associated with unplanned growth are associated with your city? What factors make them a problem? What do you think can be done about them?

4. There has been tremendous development in the arid West of the United States over the past few decades, creating demands for water. How should these demands be met? Should there be limits to this type of development? What kinds of limits, if any?

5. Imagine you are a U.S. Forest Service supervisor who is creating a ten-year plan that is in the public comment stage. What interests would be contacting you? What power would each interest have? How would you manage the competing interests of timber, mining, grazing, and recreation or those between motorized and nonmotorized recreation? What values, beliefs, and perspectives help you to form your recommendations?

6. Imagine that you lived in an area of the country that has the potential to be named a wilderness area. What conflicts do you think would arise from such a declaration? Who might be some of the antagonists? Which perspective do you think is most persuasive? How would you answer the objections of the other perspective?