

UNIT V - NATURAL RESOURCES AND CONSERVATION

Lesson 6: Conservation Issues

Competency/Objective: Describe how conservation issues affect agriculture.

Study Questions

1. **What are some agriculture-related conservation issues?**
2. **What conservation legislation affects agriculture?**
3. **How is agriculture working to maintain and conserve natural resources?**

References

1. *Exploring Agriculture in America* (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 2000, Unit V.
2. Activity Sheet
AS 6.1 Conservation in Agriculture

UNIT V - NATURAL RESOURCES AND CONSERVATION

Lesson 6: Conservation Issues

TEACHING PROCEDURES

A. **Review**

The previous lesson discussed factors affecting wildlife habitats and management of wildlife habitats. This unit will discuss conservation issues as they relate to agricultural management practices.

B. **Motivation**

Present students with the following hypothetical situation. Congress is working to pass legislation that will completely outlaw chemicals used in crop production due to the pollutants created by such practices. Have students generate a list of ways in which this will affect the production of food in the United States as well as ways in which it will affect their daily lives.

C. **Assignment**

D. **Supervised Study**

E. **Discussion**

Q1. **What are some agriculture-related conservation issues?**

A1.

- a) **Maintaining soil productivity**
- b) **Controlling pollution**
- c) **Disposing of wastes**
- d) **Destruction of forests**

Divide the board into three sections: agriculture producers, consumers (or the general public), and natural resource conservationists. Have students list how each group would have different points of view on each of the above issues.

Q2. **What conservation legislation affects agriculture?**

A2.

- a) **1985 Farm Bill created the Conservation Reserve Program, which sets aside land to be maintained as natural vegetation for 10 years.**
- b) **1996 Federal Agriculture Improvement and Reform Act modified programs involved in natural resource conservation as directed by the Natural Resources Conservation Service.**
 - 1) **Environmental Quality Incentives**
 - 2) **Conservation Farm Option**
 - 3) **Flood Risk Reduction Program**
 - 4) **Conservation of Private Grazing Land**

Discuss ways in which legislation has helped agriculture to conserve natural resources.

Q3. **How is agriculture working to maintain and conserve natural resources?**

A3.

- a) **Precision farming**

- b) Genetically altered crops
- c) Biological pest control
- d) Pesticide container reclaiming
- e) Minimum tillage or no-till cropping
- f) Rotational livestock grazing
- g) Set aside acreage
- h) Alternative power sources

Have students complete AS 6.1 and discuss practices and methods that help make agriculture environment friendly.

F. **Other Activity**

Have students debate the use of genetically altered crops as a form of reducing pesticide usage on crops.

G. **Conclusion**

Agriculture has taken great strides in improving natural resources conservation. Legislation has educated producers in ways to improve their farming practices to reduce soil erosion and pollution and improve natural habitats for wildlife. New technology assists producers in reducing chemical use and developing alternative methods of production.

H. **Answers to Assignment Sheet**

Answers will vary.

I. **Answers to Evaluation**

- 1. b
- 2. a. E
b. I
c. E
d. I
e. E
f. E
- 3. d
- 4. a
- 5. b
- 6. d
- 7. b.
- 8. d
- 9. a
- 10. d
- 11. a
- 12. c
- 13. d
- 14. a
- 15. d
- 16. b
- 17. They interact with and depend upon one another. When one is affected adversely, others may suffer.
- 18. Preservation maintains an existing natural resource. Conservation manages the use of natural resources to avoid wasting them

19. Any three of the following: Bureau of Land Management, Department of Fish and Wildlife, National Park Service, Environmental Protection Agency, Forest Service, Natural Resources Conservation Service
20. Any three of the following: human activities, water erosion, wind erosion, natural events (including earthquakes, floods, tornadoes), land slippage
21. Any three of the following: contour planting, crop rotation, terracing, grassed strips, diversion ditches, strip cropping, vegetative cover
22. Any three of the following: odor and taste, color, pH, hardness, turbidity, heavy metals, chemical residues, bacteria
23. Any three of the following: sediment, pathogens, organic wastes, inorganic wastes, organic chemicals, thermal pollutants
24. Any three of the following: human health, plant health, climate, maintain beauty of surroundings, reduce damage to property
25. Any two of the following: motor vehicle emission controls, motor vehicle exhaust inspection, increased public transportation, use of ethanol and electric cars, use of alternate energy
26. Any three of the following: Urbanization, tilling the land for crops and pasture for livestock, manufacturing and industry, mining of land, cutting trees in forests, recreation areas
27. Any three of the following: managing habitat, controlling and preventing disease, hunting and fishing regulations, artificial stocking, managing funds
28. Any three of the following: precision farming, genetically altered crops, biological pest control, minimum or no-till cropping, alternate power sources, pesticide container reclaiming

Conservation in Agriculture

Objective: Students will be able to identify agriculture-related conservation issues, the problems associated with each, and new practices that have been developed to improve conservation efforts.

Directions: Beside each agriculture-related conservation issue, list current developments that have improved conservation efforts.

| Issue | Past Problems | Current Developments |
|-------------------------------|--|-----------------------------|
| Disposing of Wastes | No controls were placed on disposal of pesticide containers. | |
| Maintaining Soil Productivity | Soil erosion was drastic due to improper tillage procedures. | |
| Controlling Air Pollution | No controls were placed on vehicle emissions, and air was becoming polluted. | |

UNIT EVALUATION

Circle the letter that corresponds to the best answer.

1. Natural resources are used by _____.
 - a. Plants
 - b. All living things
 - c. Humans
 - d. Animals

2. Place an "I" in front of the inexhaustible resources and an "E" in front of the exhaustible resources.
 - a. _____ Soil
 - b. _____ Water
 - c. _____ Oil
 - d. _____ Air
 - e. _____ Coal
 - f. _____ Natural gas

3. How do point source pollution and nonpoint solution differ?
 - a. Point of cleanup
 - b. Point of light
 - c. Point of effectiveness
 - d. Point of origin

4. How does soil erosion affect the production of food?
 - a. Decrease in crop and animal production
 - b. Decrease in mechanization
 - c. Decrease in human activity
 - d. Decrease in human population

5. Soil conservation is defined as _____.
 - a. Failure of crops growth due to soil erosion
 - b. Protection, preservation, and improvement of soil
 - c. Land overgrazed by livestock
 - d. Reducing human activity to conserve the soil

6. How is water purified naturally?
 - a. Condensation
 - b. Evaporation
 - c. Rain cycle
 - d. Hydrologic cycle

7. Determining the condition of water for a particular use is known as _____.
- Water safety
 - Water quality
 - Ecological quality
 - Environmental safety
8. The purity of the air used by living organisms is known as _____.
- Potability
 - Aerability
 - Oxygen quality
 - Air quality
9. What type of air pollutant is carbon monoxide?
- Gaseous
 - Chemical
 - Liquid
 - Invisible
10. What type of pollutant is soil in the air?
- Dirt matter
 - Fine matter
 - Soil-air matter
 - Particulate matter
11. What is the source of air pollution caused by factories?
- Human activity
 - Natural activity
 - Machine activity
 - Particle activity
12. Air pollution caused by a volcanic eruption would be the result of _____.
- Eruption activity
 - Particle activity
 - Natural processes
 - Human activity
13. The practices involved in caring for wildlife and its environment are known as _____.
- Wildlife quality
 - Environment management
 - Environment protection
 - Wildlife management
14. Which wildlife management organization protects and preserves endangered species?
- U.S. Fish and Wildlife Science
 - Forest Service
 - Bureau of Land Management
 - U.S. Department of Agriculture

15. Disposing of wastes and maintaining soil productivity are examples of _____ issues.
- a. Recreational
 - b. Air quality
 - c. Wildlife management
 - d. Agriculture-related conservation
16. How are the Federal Agriculture Improvement Reform Act and the Farm Bill similar?
- a. They outlawed farming.
 - b. They are conservation legislation affecting agriculture.
 - c. They are designed to eliminate conservation.
 - d. They fine farmers for spoiling the land.

Complete the following short answer questions.

17. Briefly explain the importance of conserving natural resources.
18. Explain the difference between preservation and conservation.
19. List three government agencies that monitor resource quality.
- a.
 - b.
 - c.
20. List three factors that could contribute to soil erosion.
- a.
 - b.
 - c.
21. List three agricultural soil conservation practices.
- a.
 - b.
 - c.

22. List three factors affecting water quality.
 - a.
 - b.
 - c.
23. List three sources of water pollution.
 - a.
 - b.
 - c.
24. List three reasons for maintaining air quality.
 - a.
 - b.
 - c.
25. Describe two practices that have been implemented to maintain air quality.
 - a.
 - b.
26. List three factors that could affect wildlife habitat.
 - a.
 - b.
 - c.
27. List three wildlife management practices.
 - a.
 - b.
 - c.
28. List three ways in which agriculture is working to maintain resources.
 - a.
 - b.
 - c.