

APES Unit 5 Study Guide

Ultimate Review Packet (5.1 - 5.3)

5.1 - Tragedy of the Commons

- a. **Explain** the tragedy of the commons, using an example other than overfishing

- b. **Propose a solution** to the example you provided above

5.2 - Clearcutting

- a. **Identify** TWO causes for clear cutting
- b. **Explain** how clear cutting maximizes short-term economic benefits, but jeopardizes long-term economic benefits
- c. **Describe** how clearcutting impacts nearby water temperature
- d. **Describe** TWO ecosystem services that are devalued by clearcutting

5.3 - Green Revolution

- a. **Identify** THREE agricultural practices that are considered a part of the Green Revolution
- b. **Describe** the impact of the Green Revolution on agricultural yields
- c. **Describe** a benefit and drawback of increased mechanization in agriculture
- d. **Describe** a benefit and drawback of GMOs
- e. **Describe** a benefit and drawback of synthetic fertilizers

APES Unit 5 Ultimate Review Packet (5.3 - 5.5)

5.3 - Green Revolution (cont.)

- a. **Describe** a benefit and drawback of synthetic pesticides

- b. **Describe** a benefit and drawback of irrigation

- c. **Describe** a benefit and a drawback of monocropping

5.4 - Environmental Impacts of Agriculture

- a. **Describe** the process of tilling and **identify** a benefit and drawback to tilling

- b. **Explain** TWO reasons slash and burn agriculture may be used

- c. **Describe** an environmental consequence of slash and burn agriculture

- d. **Explain** a soil-related benefit of using organic fertilizers rather than synthetic fertilizers

5.5 - Irrigation

- a. **Explain** how the the Ogallala Aquifer has become an example of the Tragedy of the Commons

Furrow irrigation:	Flood irrigation:	Spray irrigation:	Drip irrigation:
Efficiency:	Efficiency:	Efficiency	Efficiency

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5.5 - Irrigation (cont.)

- a. **Explain** the process of soil salinization

- b. **Propose a solution** to the issue of soil salinization

5.6 - Pest Control

- a. **Identify** TWO sub-categories of pesticides and the organisms they target

- b. **Explain** why extended use of a pesticide generally leads to a decrease in its effectiveness

- c. **Describe** how GMOs can enable decreased pesticide application

- d. **Explain** how GMOs can actually make a crop more susceptible to catastrophic disease loss

5.7 - Meat Production

- a. **Describe** TWO advantages of meat producing using CAFOs

- b. **Describe** TWO water-related disadvantages of producing meat using CAFOs

- c. **Explain** why producing plant protein for human consumption is a more efficient use of land than producing animal protein for human consumption

- d. **Describe** TWO non water-related environmental drawbacks of consuming animal protein rather than plant protein

- e. **Describe** a benefit and a drawback of producing meat using free range grazing rather than CAFOs

APES Unit 5 Ultimate Review Packet (5.8 - 5.9)

5.8 - Overfishing

- a. **Describe** how overfishing occurs
- b. Define the term bycatch and **describe** an ecological consequence of bycatch
- c. **Describe** a negative ecological consequence of bottom-trawling

5.9 - Mining

- a. Define the terms ore, overburden, and tailings
- b. **Describe** an environmental consequence of mining related to overburden removal
- c. **Describe** an environmental consequence of mining related to tailings
- d. **Identify** an environmental consequence that mountaintop removal mining shares with strip mining and one economic consequence that is more associated with mountaintop removal
- e. **Explain** why subsurface mining is more costly than surface mining