

APES Unit 8 Study Guide

Ultimate Review Packet (8.1 - 8.3)

8.1 - Point and Nonpoint Source Pollutants

- a. **Describe** the difference between point and nonpoint source pollutants, using an example of each
- b. **Identify** each of the following sources of pollution as point or nonpoint:
 A golf course An oil spill Urban stormwater runoff CAFO waste

8.2 - Human Impacts on Ecosystems

- a. **Identify** TWO sublethal effects an organism can suffer if a pollutant or environmental condition in its ecosystem exceeds its range of tolerance
- b. **Describe** the process of coral bleaching
- c. **Identify** a specific pollutant that disrupts coral reef ecosystems and **describe** how that pollutant disrupts the coral reef ecosystem
- d. **Describe** TWO effects that an oil spill can have on marine organisms
- e. **Describe** an economic consequence that an oil spill can have on coastal communities

8.3 - Endocrine Disruptors

- a. **Define** the term endocrine disruptor
- b. **Identify** TWO specific, non lethal effect that endocrine disruptors can have on aquatic species
- c. **Identify** TWO specific endocrine disruptors and **describe** how each of these chemicals could be released from their source into the environment
- d. **Identify** a human health consequence of exposure to endocrine disruptors

APES Unit 8 Ultimate Review Packet (8.3 - 8.5)

8.3 - Endocrine Disruptors (cont.)

- d. **Identify** a human health consequence of exposure to methylmercury
- e. **Identify** the main anthropogenic source of heavy metal pollution and **explain** how these heavy metals may impact ecosystems far away from their release

8.4 - Human Impacts on Wetlands

- a. **Describe** how an area can be distinguished as a wetland ecosystem
- b. **Identify** TWO examples of ecosystem services provided by wetlands
- c. **Identify** TWO human activities that disrupt wetland ecosystems
- d. **Identify** a non energy related purpose for damming a river and **describe** one ecological consequence for wetlands located downstream from a dam

8.5 - Eutrophication

- a. **Define** the two root terms that make up the word “eutrophication”
- b. **Identify** TWO possible sources of excess nitrogen and phosphorous that can lead to cultural eutrophication
- c. **Explain** how excess nitrogen and phosphorous in a water source lead to hypoxic waters
- d. **Explain** how hypoxic waters can become dead zones
- e. Define oligotrophic
- f. **Describe** the process of oligotrophic waters becoming eutrophic naturally over time

APES Unit 8 Ultimate Review Packet (8.6 - 8.8)

8.6 - Thermal Pollution

- a. **Describe** the relationship between water temperature and dissolved oxygen
- b. **Describe** a specific impact that thermal pollution can have on aquatic species
- c. **Identify** TWO human activities that can lead to thermal pollution
- d. **Propose a solution** to the problem of thermal pollution

8.7 - Persistent Organic Pollutants (POPs)

- a. **Define** the term persistent organic pollutant
- b. **Define** the term bioaccumulation
- c. **Explain** why POPs bioaccumulate in organisms over time
- d. **Identify** one impact that that accumulation of POPs can have on an organism
- e. **Identify** TWO examples of persistent organic pollutants
- f. **Explain** why DDT and PCBs still remain in many ecosystems today, despite being banned in the US in the 1970s
- g. **Describe** one way that POPs may be released into ecosystems

8.8 - Biomagnification

- a. **Explain** how biomagnification differs from bioaccumulation
- b. **Describe** a specific health impact that biomagnification of POPs can cause in top predators
- c. **Describe** one way that mercury can enter aquatic ecosystems
- d. **Propose** a solution to limit human exposure to methylmercury

APES Unit 8 Ultimate Review Packet (8.9 - 8.10)

8.9 - Solid Waste Disposal

- a. **Identify** TWO sources that contribute to Municipal Solid Waste
- b. **Define** e-waste and **explain** why it should not be disposed of in landfills
- c. **Identify** TWO other examples of products that should not be disposed of in landfills
- d. **Explain** why rubber tires should not be disposed of in large piles
- e. Draw a picture of a sanitary landfill and label and **describe** THREE specific features that are designed to prevent contaminants from being released into the surrounding environment
- f. **Describe** ONE environmental drawback of landfills
- g. **Identify** TWO benefits of burning waste
- h. **Describe** an environmental consequence of disposing of waste by dumping it in the ocean

8.10 - Waste Reduction Methods

- a. **Describe** a benefit and a drawback of recycling
- b. **Explain** why reducing or reusing waste is more sustainable than recycling
- c. **Identify** TWO examples of waste that can be composted and **describe** the process of composting

APES Unit 8 Ultimate Review Packet (8.14 - 8.15)

8.14 - Pollution and Human Health

- a. **Define** the term route of exposure, and **identify** a route of exposure for methylmercury
- b. **Explain** how the concept of synergism makes it difficult to precisely measure the impact of a given pollutant on human health outcomes
- c. **Identify** the main route of exposure for cholera and dysentery
- d. **Propose a solution** to limit exposure to cholera and dysentery in developing nations
- e. **Identify** one of the main causes of mesothelioma
- f. **Identify** a human health consequence of exposure to tropospheric ozone

8.15 - Pathogens and Infectious Diseases

- a. **Define** the terms pathogen and vector and provide an example of each
- b. **Explain** why the range of diseases like Malaria and Yellow Fever are expected to increase in the later half of the 21st century
- c. **Identify** the type of pathogen and vector for Malaria
- d. **Describe** one way that the transmission of West Nile virus differs from Malaria
- e. **Describe** one way that the transmission of Zika virus differs from Malaria
- f. **Identify** the two vectors involved in the transmission of Plague
- g. **Identify** the type of pathogen and main route of transmission for Tuberculosis
- h. **Identify** the type of pathogen, route of transmission, and one human health impact of SARS and MERS