

Advanced Placement Environmental Science Exam Review

The AP Exam is 80 multiple choice questions and three free-response questions

The Final Exam is 160 multiple choice questions

I-II. The Living World: Ecosystems & Biodiversity (8-12 questions on AP Exam, 20 questions on Final)

- A. Introduction to Ecosystems, Primary Productivity, Trophic Levels, Energy Flow, Food Chains & Food Webs
- B. Introduction to Biodiversity, Ecosystem Services, Terrestrial & Aquatic Biomes
- C. Biogeochemical Cycles (Carbon, Nitrogen, Phosphorous, Hydrologic)
- D. Island Biogeography, Ecological Tolerance, Natural Disruptions to Ecosystems & Ecological Succession
- E. Adaptations & Evolution

III. Population (8-12 questions on AP Exam, 15 questions on Final)

- A. Generalist & Specialist Species, K-Selected & r-Selected Species, Carrying Capacity
- B. Population Growth & Resource Availability, Survivorship Curves
- C. Age Structure Diagrams, Total Fertility Rate, Human Population Dynamics & Demographic Transition

IV. Earth Systems and Resources (8-12 questions on AP Exam, 15 questions on Final)

- A. Plate Tectonics
- B. Soil Formation, Erosion, Composition & Properties
- C. Earth's Atmosphere, Global Wind Patterns
- D. Watersheds
- E. Solar Radiation, Earth's Seasons, Earth's Geography & Climate, El Nino & La Nina

V. Land and Water Use (8-12 questions on AP Exam, 20 questions on Final)

- A. Introduction to Sustainability, Tragedy of the Commons, Ecological Footprints
- B. Sustainable Forestry, Clearcutting, Impacts of Urbanization, Impacts of Mining, Reducing Urban Runoff
- C. Agriculture, Irrigation, Pest Control, Meat Production, Green Revolution, IPM & Sustainable Agriculture
- D. Overfishing, Aquaculture

VI. Energy Resources and Consumption (8-12 questions on AP Exam, 15 questions on Final)

- A. Renewable & Nonrenewable Resources, Global Energy Consumption & Distribution of Energy Resources
- B. Fuel Types (Fossil Fuels, Nuclear, Biomass, Solar, Wind, Hydroelectric, Geothermal, Hydrogen Fuel Cell)

VII-VIII. Pollution (11-16 questions on AP Exam, 25 questions on Final)

- A. Air Pollution, Photochemical Smog, Thermal Inversion, Atmospheric CO₂ & Particulates, Acid Rain, Indoor Air Pollutants, Noise Pollution
- B. Sources of Water Pollution and Impacts on Ecosystems, Endocrine Disruptors, Eutrophication, Thermal Pollution, POPs, Bioaccumulation & Biomagnification
- C. Solid Waste Reduction & Disposal, Sewage Treatment, LD50, Dose Response Curve
- D. Pollution and Human Health, Pathogens & Infectious Disease

IX. Global Change (12-16 questions on AP Exam, 25 questions on Final)

- A. Stratospheric Ozone Depletion
- B. Greenhouse Gases, The Greenhouse Effect and Global Climate Change
- C. Ocean Warming & Acidification
- D. Human Impact on Biodiversity, Endangered & Invasive Species

StreamWatch Topics (0 questions on AP Exam, 25 questions on Final)

- A. Chemical (Procedure, Importance of Nitrate, Phosphate, Dissolved Oxygen, and pH in aquatic systems)
- B. Physical (Procedure, Importance of Turbidity, Color, Temperature, and Flow Rate in aquatic systems, Influence of Wind and Precipitation on flow rate)
- C. Benthic Macroinvertebrates (Procedure, Identification of Dragonfly Nymph, Caddisfly Larvae, Pouch Snail, Riffle Beetle, Water Strider, Crayfish, and Leech, Calculation of Stream Index)
- D. Large Biotics (Procedure, Identification of Mosquitofish, Bluegill, Warmouth, Brown Bullhead Catfish, Shiner, Largemouth Bass, Mallard Duck, Canada Goose, Great Blue Heron, Northern Water Snake, Black Rat Snake, Yellow-Bellied Slider, Spring Peeper, and Southern Leopard Frog)
- E. Forest Transect (Procedure, Identification of Loblolly Pine, White Oak, and Red Maple)
- F. Forest Quadrat (Procedure, Identification of soil types based on texture, porosity, and permeability)