

Focus Questions
Ecology
Chapters 52-56
AP Biology

Chapter 52

- How are climatic patterns impacted by global air circulation, seasonality, bodies of water, and mountains? What consequences do these factors have for the regions they impact? (51.1)
- How are terrestrial biomes classified? (52.2)
- Describe examples of disturbances, both anthropogenic and non-anthropogenic, and how they impact biomes. (52.2)
- How are aquatic biomes classified? (52.3)
- Describe in words or with a labeled figure the process of turnover. (52.3)
- Describe and provide examples of how the following factors impact the distribution of species: dispersal, behavior, biotic factors, abiotic factors. (52.4)

Chapter 53

- Describe how the Mark-Recapture Method allows scientists to determine population sizes. What are the benefits and limitations of this technique? (53.1)
- What factors influence how populations are dispersed? What types of patterns are often seen? (53.1)
- What type of information can be gathered by constructing a life table for a cohort? (53.1)
- Describe the three types of survivorship curves. What generalizations can be made about the organisms that fit each idealized curve? (53.1)
- What types of populations can an exponential curve accurately describe? What limitations can it have? (53.2)
- Why is a logistic growth model often seen as more realistic for populations? Provide copious examples of factors that could cause the shape indicative of a logistic curve. (53.3)
- Describe the difference between species that exhibit semelparity and iteroparity? (53.4)
- Describe the positive and negative trade-offs of K-selection and r-selection. (53.4)
- Provide examples of density independent and density dependent factors and explain how they can impact a population. (53.5)
- Explain the case with the snowshoe hare and lynx. How was the experiment performed and what did it show? (53.5)
- Describe the generalized trend of human population growth and what biological factors have allowed for this trend, (53.6)
- Why is human carrying capacity so difficult to determine? (53.6)

Chapter 54

- What different types of interspecific interactions are present in a community. Provide examples of each. (54.1)
- How do organisms adapt to competition (provide examples). (54.1)
- How does natural selection act on predators and prey? (54.1)
- How is species diversity determined? How can it be calculated? (54.2)
- Describe how energy flows through a community. Describe the factors that impact food webs and food chains. (54.2)
- Compare and contrast dominant species and keystone species and provide examples. (54.2)
- How are disturbances both biologically harmful and beneficial? (54.3)
- Explain the process of ecological succession (Be sure to explain the difference between primary and secondary.). (54.3)
- Describe the impact biogeography has on the diversity of a community. (54.4)
- Provide examples of how pathogens impact community structure. (54.5)

Chapter 55

- Describe how energy flows through all levels of an ecosystem. Your explanation must include how conservation of energy and conservation of mass relate to this energy flow. (55.1)
- What limiting factors in an ecosystem impact primary production? Provide specific examples. (55.2)
- Describe the process of eutrophication. (55.2)
- What accounts for the trophic level energy efficiency being less than 10%? (55.3)
- Describe how energy is partitioned within one link of the food chain. (55.3)
- Explain how Figure 55.12 (b) is possible. (55.3)
- Describe the forces that impact biogeochemical cycles. (55.4)
- Describe the Hubbard Brook Experiment. What has it told us? (55.4)
- Describe how bioremediation and biological augmentation can be used. (55.5)

Chapter 56

- Provide specific examples of how humans have impacted all three levels of biodiversity. (56.1)
- Describe the benefits of each of the three levels of biodiversity. (56.1)
- Briefly describe the major threats to biodiversity. (56.1)
- Describe how the following human actions have impacted the biological components of the Earth: nutrient enrichment, toxins, greenhouse gases, ozone depletion. (56.4)

Chapter 52

abiotic
 aphotic zone
 benthic zone
 biome
 biosphere
 biotic
 canopy
 climate
 climograph
 community
 detritus

dispersal
 disturbance
 ecology
 ecosystem
 ecotone
 estuary
 eutrophic lake
 intertidal zone
 landscape
 limnetic zone
 littoral zone

macroclimate
 microclimate
 oligotrophic lake
 pelagic zone
 permafrost
 photic zone
 population
 thermocline
 tropics
 turnover
 wetland

Chapter 53

age structure
 carrying capacity
 demographic transition
 density dependent
 density independent
 dispersion
 ecological footprint

emigration
 exponential population growth
 immigration
 infant mortality
 iteroparity
 K-selection
 logistic population growth

population dynamics
 reproductive table
 r-selection
 semelparity
 survivorship curve
 territoriality
 zero population growth (ZPG)

Chapter 54

aposematic coloration
 Batesian mimicry
 biomass
 coevolution
 commensalism
 competitive exclusion
 cryptic coloration
 dominant species
 ecological niche
 ecological succession

food chain
 food web
 herbivory
 interspecific competition
 invasive species
 keystone species
 Müllerian mimicry
 mutualism
 parasitism
 pathogen

predation
 primary succession
 relative abundance
 resource partitioning
 secondary succession
 Shannon diversity
 species diversity
 species richness
 symbiosis
 trophic structure

Chapter 55

actual evapotranspiration
 biogeochemical cycle
 biological magnification
 bioremediation
 decomposer
 detritivore

eutrophication
 greenhouse effect
 gross primary production (GPP)
 limiting nutrient
 net primary production (NPP)
 primary consumer

primary producer
 secondary consumer
 secondary production
 tertiary consumer
 turnover time

Chapter 56

biodiversity hot spot
 endangered species
 extinction vortex

greenhouse effect
 introduced species
 minimum viable population (MVP)

population viability analysis (PVA)
 threatened species