

Unit 8 – Biomes & Ecology Twitter Review Questions

U8-1: NEED TO KNOW: Be able to correctly order the ecosystems from least to most inclusive.

- Answer: Individual/Organism → Species → Population → Community → Ecosystem → Biome → Biosphere

U8-2: Identify three (3) benefits of a high biodiversity within a species.

- Answer: 1) Increased # niches 2) Minimal death due to disease 3) High rates of survival following natural disasters

U8-3: Define commensalism.

- Answer: Relationship between two organisms in which one organism benefits without either a positive or negative impact on the other organism

U8-4: Species that are introduced into a new ecosystem accidentally or intentionally are referred to as _____.

- Answer: Non-Native (Invasive) Species

U8-5: The location where a species lives is referred to its _____.

- Answer: Habitat

U8-6: NEED TO KNOW: Be able to identify/provide examples of non-native (invasive) species to both the United States and North Carolina.

- Answer: Burmese Pythons (US) / Kudzu, Fire Ants, Dutch Elm Disease (NC)

U8-7: Why are invasive species able to thrive in its new environment?

- Answer: Lack of predators

U8-8: Such as in the poor soil of the boreal (taiga) forest, what happens to the nutrients in the body of a dead organism?

- Answer: Nutrients are released into the soil by decomposers

U8-9: NEED TO KNOW: Be able to classify organisms within its appropriate trophic level.

- Answer: Producers, Primary Consumers, Secondary Consumers, Tertiary Consumers. NOTE: An organism may fit in multiple trophic levels depending on the path of the food chain/web

U8-10: Any ecosystem will contain many different species. What would happen if a species is removed from the ecosystem?

- Answer: Number of species in the ecosystem will be reduced

U8-11: Identify three (3) examples of a biotic factor.

- Answer: Bacteria / Alligator / Birds

U8-12: Identify three (3) examples of an abiotic factor.

- Answer: Sunlight / Water / Soil

U8-13: What percent of usable energy is transferred within any two trophic levels?

- Answer: 10%

U8-14: What is true about the structure of an ecosystem?

- Answer: It is a functioning community of interacting populations of species made up of individual organisms that all coexist within the same habitat.

U8-15: What would happen to a population with high genetic diversity that is subjected to negative environmental changes?

- Answer: Population decreases at first but then recovers

U8-16: The storage of solar energy by autotrophs (producers) occurs during which process?

- Answer: Photosynthesis

U8-17: Write the full equation for cellular respiration.

- Answer: $C_6H_{12}O_6 + 6 O_2 \rightarrow 6 CO_2 + 6 H_2O + Energy$

U8-18: The introduction of most invasive species to an ecosystem is mainly due to _____.

- Answer: Human actions

U8-19: When the same or different species of an organism live within the same habitat, they will often _____ for the same food sources.

- Answer: Compete

U8-20: NEED TO KNOW: Be able to label the different components of a population growth graph.

- Answer: Carrying capacity / Peak population size / Declining population size / Exponential growth / Biotic potential

U8-21: NEED TO KNOW: Be able to classify different biome types based on location, climate, soil type, plant, and animal types.

- Answer: Tundra / Boreal (Taiga/Coniferous) Forest / Deciduous Forest / Tropical Rainforest / Desert / Grassland

U8-22: Explain the difference between density-dependent and density-independent limiting factors.

- Answer: 1) Density-dependent: Factors whose effect on size or growth of a population is dependent on the number of individuals within the population.

2) Density-independent: Factors that exert their influence on size or growth of a population REGARDLESS of population size.

U8-23: Identify three (3) examples of density-dependent limiting factors.

- Answer: Predation; Competition / Disease / Pollution; Waste

U8-24: Identify three (3) examples of density-independent limiting factors.

- Answer: Weather/Climate phenomenon such as hurricanes / tornadoes / floods / wildfires / droughts

U8-25: NEED TO KNOW: History and impact of introduction of zebra mussels to the U.S.

- Answer: Refer to lesson notes

U8-26: Identify three (3) factors that can determine an ecological niche.

- Answer: 1) How physical environment is used 2) How mates are obtained 3) Feeding relationships with other species

U8-27: Identify three (3) implications of habitat destruction.

- Answer: 1) Decrease in biological/genetic diversity 2) Extinction of plant species 3) Extinction of animal species

U8-28: A group of individuals of the same species in a given area at the same time is called a _____.

- Answer: Population

U8-29: What are some implications of a population reaching its carrying capacity?

- Answer: Habitat can no longer support additional members to the population and thus there will be increased competition for food, shelter, and potential mates.

U8-30: What is true of a population in which its birth rate exceeds its death rate?

- Answer: Population size increases

U8-31: Describe biomes.

- Answer: Geographically distinct ecosystems identified by its location, climate, soil, plant, and animal types.

U8-32: Photosynthetic plants are also referred to as _____.

- Answer: (Primary) Producers/Autotrophs

U8-33: Ecosystems with rich genetic variations of plant and animal species also have high _____.

- Answer: Biodiversity

U8-34: Explain why food webs are more accurate depictions of feeding relationships compared to food chains.

- Answer: Food webs show a comprehensive interlocking feeding relationship of multiple food chains where organisms always eat and are eaten by DIFFERENT organisms

U8-35: Cellular (aerobic) respiration takes in _____ and produces _____.

- Answer: Oxygen ; carbon dioxide & water

U8-36: What determines how many trophic levels there are in an ecological pyramid?

- Answer: Limited by amount of energy available and is lost at each trophic level (10% rule)

U8-37: What is the MOST important factor in determining which biome is found in a particular area?

- Answer: Climate

U8-38: Describe an ecosystem.

- Answer: Community of living organisms (biotic) interacting with one another and their abiotic environment

U8-39: Describe genetic diversity and impact of a population with high genetic diversity.

- Answer: Variety of genetic traits within a population that reduces chance of entire population extinction due to introduction of environmental changes

U8-40: Describe apex predators.

- Answer: Predators without its own predator in the food chain

U8-41: Identify three (3) methods in which an ecosystem habitat can be degraded.

- Answer: 1) Pollution/waste 2) Introduction of invasive species 3) Removal of predators/prey

U8-42: Describe the role of decomposers within an ecological pyramid.

- Answer: Breaks down dead organic matter and releases nutrients back into soil for producers (autotrophs)

U8-43: Describe biotic potential and how a population can increase its biotic potential.

- Answer: Max capacity of a population to reproduce; Increase reproduction rate due to exponential growth of population as biotic/abiotic resources increase

U8-44: Explain why every population will eventually reach its carrying capacity.

- Answer: Environment/habitat can only support but a certain density of organisms within the same environment as it is limited by availability of biotic/abiotic factors

U8-45: In the case of the black footed ferrets, how can its population survive biological and environmental changes?

- Answer: Increase in species richness = Increase in biodiversity = Increase in genetic diversity = Increase survival rate due to environmental changes