**Pre-AP Ecology Test Review**

*Refer to the following questions and vocabulary to help you to review for the test.*

* Required vocabulary: trophic level, autotrophs, producers, heterotrophs, a/biotic factor, habitat, niche, photosynthetic, chemosynthetic, detrivores, omnivores, decomposers, scavengers, herbivores, carnivores, transpiration, nitrogen fixation, denitrification, combustion, cellular respiration, photosynthesis, fossil fuels, deforestation, greenhouse gas, pioneer species, biological magnification/biomagnification, denitrification, limiting nutrient, eutrophication, abiotic/biotic factor, adaptation, ecosystem stability, plankton, phytoplankton, zooplankton, photic, aphotic zone, invasive species, population density, density dependent factor, density independent factor, competition, nonrenewable/renewable , sustainable development, immigration, emigration, non/renewable resource, acid rain, endangered species, limiting factor, primary productivity, competitive exclusion principle, keystone species, ecological hot spot, and ecological footprint.
* What is ecology?
  + What is biodiversity?
    - What are some practices that can reduce biodiversity?
* What are the levels of ecological organization, from least inclusive to most inclusive?
* What is the difference between abiotic and biotic factors?
  + Give an example of an abiotic factor.
  + Give an example of a biotic factor
* What is the relationship between a habitat and a niche?
* How do producers and consumers obtain energy and nutrients?
  + What are primary producers?
    - What are other applicable terms for producers?
    - Give an example
    - What 2 processes primary producers use to obtain energy?
      * What is chemosynthesis?
        + What is an organism that engages in chemosynthesis?
  + What are heterotrophs?
    - Give an example
    - What are other applicable terms for heterotrophs?
    - What is a detrivore?
      * Give an example
    - What is an omnivores?
      * Give an example
    - What is a decomposer?
      * Give an example
    - What is a scavenger?
      * Give an example
    - What is a herbivore?
      * Give an example
    - What is a carnivore?
      * Give an example
* How does energy flow through ecosystems?
  + What is a food chain?
    - What do the arrows in a food chain represent?
    - Where can you find producers in a food chain?
    - What is a producer in aquatic ecosystem?
      * What is the relationship between phytoplankton and zooplankton?
  + What is a food web?
  + What is an ecological pyramid?
    - What are the 3 types of ecological pyramids?
    - What is a trophic level?
    - What percent of energy available at one trophic level is passed on to the next trophic level?
* What is a biogeochemical cycle?
  + Compare how matter moves through the biosphere as compared to the movement of energy in the biosphere
  + Describe the movement of carbon throughout the carbon cycle
    - How is cellular respiration and photosynthesis related?
    - What is combustion?
    - How are fossil fuels, deforestation, and greenhouse gases related?
  + Describe the movement of nitrogen throughout the nitrogen cycle
    - How is nitrogen fixation and denitrifying bacteria related?
    - What is denitrification?
    - What is eutrophication?
      * What is the effect of eutrophication on aquatic ecosystems?
* What is symbiosis?
  + What are the 3 types of symbiosis?
    - Give an example of each
* What is the competitive exclusion principle?
  + Give an example
* What is ecological succession?
  + What are 2 differences between primary and secondary succession?
  + Which succession (primary or secondary) involves pioneer species?
    - What is a pioneer species?
    - What is a climax community?
  + What is meant by the term- ecosystem stability?
* What are biomes?
  + What abiotic factors play a large role in determining the biotic factors in a biome?
  + What are examples of biomes?
  + What are adaptations of organisms to various biomes?
    - Give examples of each organism adapted to a specific biome.
* What factors affect life in aquatic ecosystems?
  + What are limiting factors in aquatic ecosystems?
    - What is a limiting factor?
  + What is the photic zone?
    - What process do organisms engage in to obtain energy?
  + What is the aphotic zone?
    - What process do organisms engage in to obtain energy?
* What is biological magnification/biomagnification?
  + What is the effect of biomagnification on organisms at each trophic level?
* What is an invasive species?
  + What is the effect of an invasive species on native populations?
* What is a keystone species?
  + Why are they important to an ecosystem?
* What is primary productivity?
  + What are factors that affect it?
* What factors affect population growth?
  + What are density-dependent limiting factors?
    - Give an example
  + What are density-independent limiting factors?
    - Give an example
  + What is population density?
  + What is immigration?
    - Does that increase or decrease population size?
  + What is emigration?
    - Does that increase or decrease population size?
  + Describe what happens during exponential growth
    - Give an example of exponential growth
  + Describe what happens during a logistic growth curve
    - Give an example of a logistic growth curve
    - What is carrying capacity?
      * Does carrying capacity increase or decrease population size?
* What is an endangered species?
  + Give an example
* What is a renewable resource?
  + Give an example
* What is a nonrenewable resource?
  + Give an example
* What is sustainable development?
  + What is the effect of sustainable development?
  + What is the relationship between an ecological footprint and an ecological hot spot?
* What is acid rain?
  + Under what conditions does it form?
  + What are some of its effects?