

Quiz 2**ESR 101 Fall 2009****November 17, 2009**

A. Vocabulary. Give a several word definition. [1 point each]:

**DON'T USE THE WORD IN THE DEFINITION.
IF YOU GET STUCK, GIVE AN EXAMPLE.**

1. Niche

habitat (place) and role in the community

2. Trophic levels

feeding level description in steps away from primary producers that get their energy from the sun

3. Succession – traditional

orderly and predictable change in community structure with time from bare rock to climax community

4. Resilience

several possible:

amount of perturbation required to flip to another state

ability of an ecosystem to handle stress while retaining the same basic characteristics

5. Biodiversity

range of different types of genetics, species or habitat

6. Biodiversity hotspot

high biodiversity spot that is either:

high endemic biodiversity or,

needs protection because it is a source of diversity for surrounding areas

7. Ecosystem services

utilitarian, monetary, financial or some other benefit that humans get from ecosystem functioning

B. Concept multiple choice. Circle the best answer. [2 points each]:

8. The dominant biome in Western Oregon is: (This was on the mini-quiz 3)

a. Temperate Broadleaf Forest

b. Temperate Conifer Forest

c. Boreal Forest

d. Temperate Grassland

9. Coevolution of species in communities leads to many characteristics. Which of these below is **NOT** a feature:

a. interdependence

b. tight predator-prey connections

c. dominance based solely on individual fitness

d. niche sharing

e. shifts in competition for resources

10. Net community productivity is:
- plant and animal growth
 - plant growth minus animal growth
 - gross productivity minus community respiration
 - gross productivity plus community respiration
 - sum of all the productivity of all trophic levels

C. Viewer multiple choice. Circle the best answer. [2 points each]:

11. In a "systems view" of a forested ecosystem, a key feature would be:
- reinforcing feedback from internal water cycling
 - connectedness of forest patches
 - size of the watershed and patches
 - importance of biodiversity of tree species
 - b & d
12. In a "network view" of a forested ecosystem, a key feature would be :
- reinforcing feedback from internal water cycling
 - connectedness of forest patches
 - size of the watershed and patches
 - importance of biodiversity of tree species
 - b & d
13. In a "scale view" of a forested ecosystem, a key feature would be:
- reinforcing feedback from internal water cycling
 - connectedness of forest patches
 - size of the watershed and patches
 - importance of biodiversity of tree species
 - b & d

D. Short answer essays that tie everything together. Use appropriate vocabulary, concepts and insight from one or more perspectives. [3 points each]:

14. Briefly describe why intermediate disturbances are important for ecosystem health?
What aspects of this could be explained as the behavior of a **network**?
How would you consider the **scale** when studying these disturbances within an ecosystem?

A good answer should contain:

- a reason why disturbances are important – and not just that they are important
- some insight from network view such as level of connectedness is maintained at an intermediate value
- some mention of how scale is important for studying this such as that the patches in the whole system or the duration and frequency of intermediate disturbances is important

15. Give an example of a system that has multiple stable states. Describe the two states.
Name and describe two characteristics of this system that you would need to understand in order to manage the improvement or restoration.

A good answer would name a multiple stable state system such as high algae lakes, the savanna or tropical forests and would describe the two parts.

- high algae – clearer with plants
- savanna or the more trees
- tropical forest or in the cut downs state with bare soil

three important characteristics that we described for all of these were the resilience of each state, how they were stabilized by reinforcing feedbacks and the idea that there are threshold responses between the states (and possibly hysteresis in paths between the two states)