

BI328
CONSERVATION BIOLOGY
Fall 2020

REVIEW QUESTIONS: CONCEPTS, MEASURES, PATTERNS, DRIVERS

1. Explain the difference between the background extinction rate and mass extinction events.
2. There are four hypothesized main causes of past mass extinction events. Briefly describe each of them.
3. Give a brief definition of Biodiversity.
4. Briefly describe the three main hierarchical levels of biodiversity.
5. Biodiversity can be described as compositional, structural, or functional diversity. Briefly describe each and explain the main difference in the quantifying biodiversity in compositional and functional terms.
6. Briefly explain the concept of biocomplexity and compare/contrast it to biodiversity.
7. Species diversity is frequently measured as abundance (richness) and diversity (evenness), briefly describe each measure and argue which you think is more useful to quantify biodiversity.
8. Briefly explain how you would quantify ecosystem diversity.
9. Biodiversity is unequally distributed. One prominent pattern is the latitudinal gradient. Briefly describe what that pattern looks like and explain each of the three leading hypothesis explaining the observed pattern.
10. Briefly explain what an ecological extinction is.
11. List three ecological roles that maintain and increase biodiversity.
12. Characterize dominant/controller species, keystone species, and ecosystem engineers in terms of their relative biomass in an ecosystem and their impact on the species diversity of an ecosystem.
13. Compare and contrast the roles of a keystone species and an ecosystem engineer.
14. Compare and contrast the roles of a dominant/controller species and a keystone species.
15. Compare and contrast the roles of a dominant/controller species and an ecosystem engineer.
16. Use an example to explain what an ecosystem engineer, keystone species, controller/dominant species is.
17. Argue whether you would choose conserving an ecosystem that was functioning properly (productivity, nutrient cycling, species interactions) or an ecosystem with a complete set of native species.
18. Briefly explain how your conservation goals/strategies would differ if your focus is on compositional vs. structural/functional diversity.
19. Give some examples for evolutionary and ecological drivers and explain the two categories differ.
20. Argue whether genetic drift and selection result in a net loss or gain of biodiversity (you may want to consider multiple hierarchical levels of biodiversity).
21. Briefly explain how competition can increase biodiversity.
22. Briefly explain how predation can increase diversity.

23. Argue whether abiotic disturbances increase or decrease biodiversity - consider that disturbances differ in their scale & frequency.