

## Cheat Sheet

## Chapter 54 Questions

1. What is a community?
2. What are interspecific interactions?
3. What is competition?
4. What is competitive exclusion?
5. What is an ecological niche?
6. What is resource partitioning?
7. What is a fundamental niche?
8. What is a realized niche?
9. What is character displacement?
10. What is exploitation?
11. What is predation?
12. What is aposematic coloration?
13. What is cryptic coloration?
14. What is Batesian mimicry?
15. What is Müllerian mimicry?
16. What is *Thaumoctopus mimicus*?
17. What is herbivory?
18. Name 6 chemical defenses of plants.
19. What is parasitism?
20. What are endoparasites?
21. What are ectoparasites?
22. What are positive interactions?
23. What is mutualism?
24. What is commensalism?
25. What is species diversity?
26. What is Shannon diversity?
27. How does diversity affect productivity and stability?
28. What is biomass?
29. What is the trophic structure of a community?
30. What is a food chain?
31. What is a trophic level?
32. What is a food web?
33. What are nonexclusive consumers?
34. What is the energetic hypothesis?
35. What are dominant species?
36. What are keystone species?
37. What are ecosystem engineers?
38. What does the  $N \rightarrow V \rightarrow H \rightarrow P$  notation mean?
39. What is the bottom-up model?
40. What is the top-down model?

41. What is biomanipulation?
42. What is stability?
43. What is a climax community?
44. What is a disturbance?
45. What is the nonequilibrium model?
46. What is the intermediate disturbance hypothesis?
47. What is ecological succession?
48. What is primary succession?
49. What is a moraine?
50. Which macroscopic organisms are often the first during primary succession?
51. What is secondary succession?
52. What is trawling?
53. Why are tropics more diverse?
54. What is evapotranspiration?
55. What is potential evapotranspiration?
56. What is the species-area curve?
57. What effect does the number of species on an island have on immigration and extinction?
58. What effects does an island's size and distance from mainland have?
59. What is the island equilibrium model?
60. What is white band disease?
61. What are zoonotic pathogens?
62. What are H1N1 and H5N1?

## Chapter 54 Answers

1. A group of populations of different species living in close enough proximity to interact
2. Interactions between organism and individuals from other species
3. +/- interaction, individuals of different species compete for limiting resources
4. Two species competing for the same limiting resources cannot coexist permanently in the same place, even slight advantage = local elimination of inferior competitor
5. Specific set of biotic and abiotic resources that an organism uses in its environment
6. Differentiation of niches of two ecologically similar species in same community, enables them to coexist
7. Niche potentially occupied by that species
8. Portion of fundamental niche that it occupies
9. Tendency for characteristics to diverge more in sympatric rather than allopatric populations of two species
10. General term for any +/- interaction
11. +/- interaction between species in which predator kills/eats prey
12. Warning coloration, bright, predators avoid brightly colored prey
13. camouflage, makes prey hard to see
14. Palatable or harmless species mimics unpalatable/harmful species
15. Two or more unpalatable species resemble each other
16. mimic octopus, mimics many animals
17. Exploitative, organism (herbivore) eats parts of plant/alga
18. Strychnine from tropical vine *Strychnos toxifera*, nicotine from tobacco, tannins from many plant species, compounds responsible for flavor of cinnamon, cloves, peppermint
19. Exploitative where parasite derives nourishment from host (harmed in process)
20. Parasites that live within the body of their host
21. Parasites that feed on external surface
22. ++ or +/- interaction, at least one benefits, neither harmed
23. Interspecific interaction that benefits both species (++)
24. Benefits one of the species, neither harms/helps other (+/-)
25. Variety of different kinds of organisms that make up the community, two components (species richness = number of different species, relative abundance = proportion each species represents)
26. represented by H,  $H = -(p_A \ln p_A + p_B \ln p_B + p_C \ln p_C + \dots)$  where  $p_x$  is relative abundance
27. More diverse = more productive and better able to recover from stresses. More stable/resistant to invasive species (organisms that become established outside native range).
28. Total mass of all organisms in a habitat
29. Feeding relationships between organisms
30. Transfer of energy upward from autotrophs (primary producers) to herbivores (primary consumers) to carnivores (secondary/tertiary/quaternary consumers) to decomposers
31. Position an organism occupies in a food chain

32. Group of food chains linked together
33. Organisms that can be weaved into food web at more than one trophic level
34. Length of food chain limited by the inefficiency of energy transfer (on avg. 10% of energy passed between levels)
35. Species that are the most abundant or collectively have the highest biomass, one hypothesis says superior in exploiting limiting nutrients, other says superior at avoiding herbivory/impact of disease
36. Not usually abundant, exert strong control on community structure by pivotal ecological roles
37. Species that dramatically alter their environment, "foundation species"
38. Increase in nutrients will increase vegetation, will increase herbivores will increase predators (not vice versa)
39.  $N \rightarrow V \rightarrow H \rightarrow P$
40. Predation mainly controls community organization, also called trophic cascade model.
41. Prevent algal blooms by altering density of higher-level consumers
42. Community's tendency to reach and maintain relatively constant composition of species
43. The only stable equilibrium, controlled solely by climate
44. Event that changes community by removing organisms from it or altering resource availability
45. Most communities are constantly changing after disturbance, stable communities can be rapidly transformed into nonequilibrium communities
46. Moderate levels of disturbance foster greater species diversity than do high or low levels of disturbance. High levels reduce diversity by excluding many species. Low levels can allow competitively dominant species to exclude less competitive species
47. Species colonize disturbed area, replaced by other species, replaced by other species...
48. Ecological succession that begins in virtually lifeless area where soil hasn't been formed
49. Rubble left by a retreating glacier
50. Lichens and mosses because grow from windborn spores
51. Occurs when existing community has been cleared by a disturbance that leaves soil intact
52. Boats drag weighted nets across seafloor
53. Tropical communities older since other areas often start over after major disturbances and get high levels of sunlight/precipitation
54. Evaporation of water from soil and plants, function of solar radiation, temperature, and water availability
55. Measure of potential water loss that assumes that water is readily available, determined by solar radiation and temperature
56. The larger the geographic area of a community, the more species,  $S = cA^z$  where S is number of species, c is a constant, and A is area of habitat, z tells how many more species should be found in habitat as its area increases (in log-log plot, is slope of line through data points, usually 0.2-0.4)
57. Immigration rate decreases as species number increases, extinction rate increases

- 58. Small islands have lower immigration rates, higher extinction rates. Closer island = higher immigration rate, lower extinction rate
- 59. Equilibrium will eventually be reached where rate of species immigration = rate of species extinction
- 60. unknown pathogen, kills corals by causing tissue to slough off in a band near the tip of the branches
- 61. Those transferred to humans from other animals (vectors),  $\frac{3}{4}$  of emerging human diseases, many of most devastating established diseases
- 62. swine flu (virus) first detected in Veracruz Mexico

Avian flu, has not affected humans (yet)