Mr. Haring Biology
Spring Semester 2014, Final Exam Study Sheet

Our spring final exam will cover chapters **3-6, 15-16 & 35- 38, 40**. I recommend that you study your notes, vocabulary definitions, any other terms emphasized with bold or italics type in the textbook, the "key concepts" sections near the end of each chapter, and past chapter study guides.

The following questions will help prepare you for the final:

Ch 2 and 3: Communities and Biomes/ Principles of Ecology

1. What happens to the amount of available energy/biomass as you move up a food chain or an ecological pyramid and how much transfers up?
2. Study **Figure 2-3** to the right and answer the following questions:
   a. Which level represents the seeds and grass?
   b. What level consumer is the snake?
   c. How much energy would the chipmunk have if the producers had 20,000g of available energy?
3. List at least 4 things that organisms depend on other organisms to provide for them.
4. Write down an example of a food chain. Include at least 3 trophic levels.
5. Study **Figure 2-2** to the right and answer the following questions:
   a. How many food chains make up this food web?
   b. What type of organism is the plant?
6. Which element is the 'molecule of life' and is found in all living things?
7. Define and give examples of abiotic and biotic items.
8. What does a herbivore, omnivore and carnivore eat?
9. Define the types of symbiotic relationships and give one example of each.
10. List all the terrestrial biomes and aquatic biomes and what the key thing each is known for.
11. **a.** List at least 3 ways that carbon/CO_2 *enters* the carbon cycle.
    b. List at least 3 ways that carbon/CO_2 is *removed* from the carbon cycle.
12. List at least 5 ways the energy is moved throughout the nitrogen cycle.
13. How do heterotrophs obtain the energy they need to survive?
14. Which element (from one of the Earth's natural cycles) is required for growth and development and is in our DNA?
15. How does phosphorus enter the atmosphere?
16. **a.** Describe/give an example of primary succession. **b.** Describe/give an example of secondary succession
17. What are the pioneer species for both primary and secondary succession? Give the order of growth of organisms for primary succession.

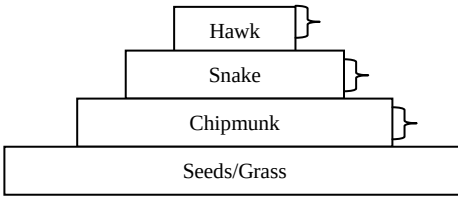


Figure 2-

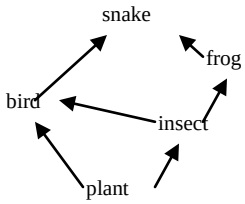
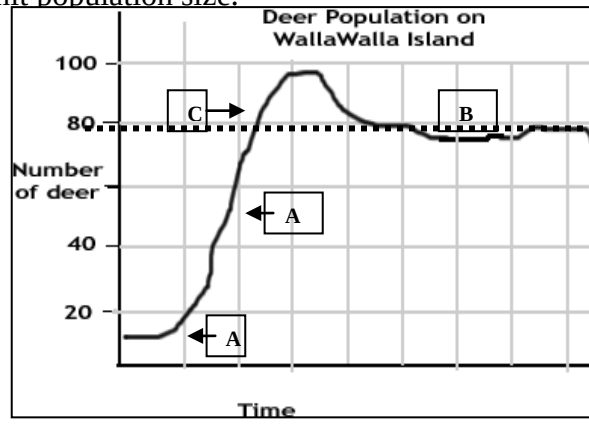


Figure 2-

Chapter 4: Population Biology

1. What's the most important factor that determines a population's growth?
2. List at least 3 ways that describe how organisms' interactions limit population size.
3. Look at the **graph on the right** and answer the following questions:
   a. Which letter represents the beginning growth of the deer population? **b.** Which letter represents rapid growth? **c.** Which letter represents the carrying capacity? **d.** Which letter represents the fluctuations that occur once a deer population reaches its carrying capacity? **e.** What is the carrying capacity of the deer on WallaWalla Island?
4. Write an example for emigration and immigration.



5. Give examples of density dependent and independent variables.
6. What effect does the movement of people between countries have on total world population?
7. What has been the trend in human population growth over the past several hundred years?
8. What problem does migration cause for demographers?
9. List 2 pieces of information that demographers use to make predictions about future population growth.

Chapter 5 and 6: Biological Diversity and Conservation

1. Describe 4 types of threats to biodiversity.
2. List at least 3 reasons why biodiversity is important to nature.
3. List at least 4 reasons why biodiversity is important to humans
4. What is the biggest threat to biodiversity?
5. Study **Figure 5-2** and **5-3** and answer the following questions:
   a. Which area best represents an example of habitat loss?
   b. . . . of habitat fragmentation?
   c. . . . of the biggest cause of air pollution?

Figure 5-2 represents a wilderness area *before* human development.

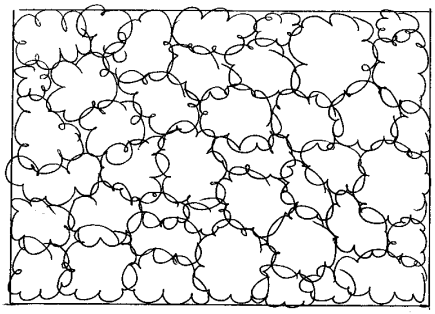


Figure 5-2

Figure 5-3 represents a wilderness area *after* human development.

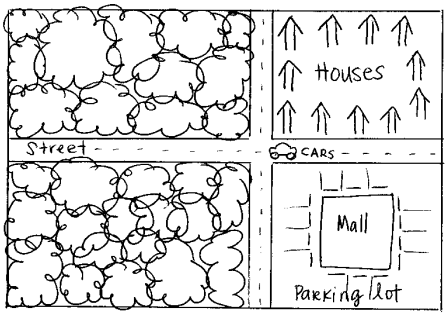


Figure 5-3

6. Study **Figure 5-4** (which shows an airplane view of wilderness areas *before* conservation work and *after* conservation work) and answer the following questions:
   a. What was the problem w/the wilderness area before conservation work?
   b. How did conservation biologists try to fix the problem in Figure 5-4?
   c. What is conservation biology?

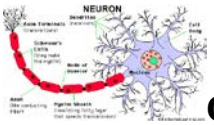
Figure 5-4

9. As human population growth increases, what is happening to the extinction rate of other species?
10. True or False: The loss of *one* species has *no* consequences for other living things.
11. What's the order before extinction and what law was written to help animals before they reach extinction.
12. True or False: <u>Biodiversity</u> is *NOT necessary* for human existence to continue.

Ch 15 and 16- Natural Selection

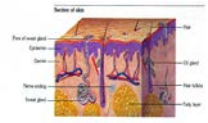
1. Give an example of a vestigial structure.
2. What island did Darwin travel to, to find bio-diversity?
3. What helped propose the theory of evolution?
4. Define punctuated equilibrium and gradualism?
5. What's the difference between convergent and divergent evolution?
6. Who is the founder of the modern evolution theory?
7. Define Mimicry, and camouflage.
8. What's the difference between natural and artificial selection?
9. Are mutations important in evolution? Explain
10. Give an example of geographic isolation.
11. List at least 3 examples of vestigial structures in humans or other organisms.
12. What are the 2 main causes of genetic variety? (Why do organisms change?)
13. Describe the difference between the 3 types of reproductive isolation. (Behavioral, temporal and geographic)
14. Define Genetic Equilibrium and list the its 5 conditions.

15. If you add the p allele and the q allele in a population up what % would you get?
16. What is a gene pool?



Ch 35-Nervous System

1. What's the difference between physical dependence and psychologically dependent?
2. What is the correct order of the path of a neuron? (Inter, motor, sensory?)
3. Draw a neuron and label the following parts: dendrite, nucleus, axon terminals, and axon.
4. Define threshold and action potential.
5. How do your pupils react to light?
6. What is your largest sense organ?
7. Which vision cells allow humans to see color? (Rods or cones)
8. Which part of the ear is involved in maintaining balance?
9. What are the different sensory receptors and where are they located?



Ch 36- Protection, Locomotion, and Support System

10. What are the 3 types of muscles?
11. Where are the 3 types of muscles found?
12. What are the 2 layers of your skin called and what is found on each layer?
13. What are the four types of bones and where are they found?
14. What is your first line of defense and protection against harmful things in the air?

Ch 37- Respiratory and Circulatory System

15. What part of your brain controls your breathing?
16. Be able to label the parts of the respiratory system. (Mouth, nose, trachea, epiglottis, bronchi, bronchioles, diagram, alveoli, lungs, pharynx, and larynx)
17. Where in the lungs does the gas exchange happen?
18. What does your diaphragm do?
19. What does blood transport?
20. What's the difference between arteries, capillaries, and veins?
21. Which vessels carry the blood to the heart and which vessels carry the blood away from the heart?
22. What is the purpose of the septum?
23. Describe the function of a valve.
24. Which side of the heart is for oxygen rich blood and which is for oxygen poor?
25. What are the dangerous items in cigarettes?
26. What's in your nose that helps trap pathogens?
27. How many chambers does your heart have?
28. What are the 2 circulation loops and their functions?
29. Be able to label the parts of the heart. (Right atrium, left atrium, right ventricle, left ventricle, septum, aorta, vena cava, pulmonary artery, and pulmonary vein)

Ch 38- Digestive and Excretory System

30. What is the path your food takes? (From start to finish, mouth…anus)
31. Where is bile made?
32. Be able to tell me the structures of the digestive system by a diagram. Ex: esophagus, liver, stomach, and small and large intestine.
33. What is chyme and villi and where are they found?
34. What is the enzyme in your saliva called?
35. What is the enzyme in your stomach called?
36. What are the two sphincter valves located in the esophagus and duodenum(small intestine)?
37. How does your digestive system break up your food?

Ch. 40- Immune System

38. Draw a diagram of the cell mediated response. (Label T helper cells, pathogens, killer t cells Macrophages)
39. What is the body's most important non-specific response?
40. Describe the inflammatory response.
41. Diagram and label the antibody mediated response. Label B cells, antibodies, plasma cells, memory b cells.
42. How do vaccinations work?

STUDY!!!!! THIS REVIEW SHEET IS DUE JUNE 3RD & WORTH _____ POINTS!!!

2014 SPRING FINAL SCHEDULE

WEDNESDAY, JUNE 4TH - PERIOD 1, 5 &6

THURSDAY, JUNE 5TH - PERIOD 1, 2 & 4

FRIDAY, JUNE 6ST - PERIOD 3 & 7