

CHAPTER 5, DIVERSITY OF AQUATIC ORGANISMS: LARGER ORGANISMS – STUDY GUIDE  
*Survey of Limnology & Oceanography*

*The purpose of learning this information is to introduce the cast of characters, namely the larger aquatic organisms.*

Key Terms:

cryptic, radula, vertebrae, tetrapods, planktivore, piscivore, detritivore, herbivore, benthivore, omnivore, saltatory, spawn, macrophytes

Key Question/Topics:

1) **Mollusks – Phylum Mollusca**

- a) What are the two major groups of mollusks in fresh water?
- b) What types of shells can mollusks have?
- c) Where can you find freshwater mollusks?
- d) Which mollusks are the most active? How do snails and bivalves move about their environment?
- e) Are freshwater snails carnivorous or herbivorous? How do they feed?
- f) What type of reproduction do most mollusks exhibit? Describe what happens to the eggs of freshwater snails and bivalves.
- g) Describe the economic importance of mollusks.

2) **Fishes – Phylum Chordata, Subphylum Vertebrata**

- a) What is a vertebrate?
- b) Of the vertebrates, which is the most species-rich group?
- c) What three classes are the fishes grouped into? Briefly describe them.
- d) *Be able to identify the following fish (Figure 5.2 on page 125) by picture: lamprey, carp, yellow perch, pike, sunfish, largemouth bass, salmon, and catfish*
- e) How do fish reproduce.
- f) Why is there a close relationship between the fish's shape and the kind of food it eats? *Review Table 5.2 on pages 126 and 127.* Also, describe why there is a close relationship between the fish's feeding preferences, the habitat in which it occurs, and its swimming behavior.
- g) Describe the following feeding types: planktivore, piscivore, detritivore, herbivore, benthivore, and omnivore.
- h) Describe the economic importance of fishes.

3) **Other Vertebrates – Classes Amphibia, Reptilia, Aves, and Mammalia**

- a) Which group of "other vertebrates" is most closely related to fishes?
- b) Describe the habitat of most amphibians, reptiles, birds, and mammals.
- c) What do most vertebrates eat? *Review Table 5.4 on page 132.*
- d) How do most vertebrates reproduce?
- e) Describe their economic importance.

4) **Plants – Aquatic Macrophytes**

- a) How do plants get their energy?
- b) *Be able to identify the following macrophytes (emergent and floating species in Figure 5.6 on page 136 & submerged species in Figure 5.7 on page 137) by picture: water lily, sundew, duck weed, milfoil, and bladder wort*
- c) Why is there a close relationship between morphological form and habitat? *Review Table 5.5 on page 138.*
- d) How often do most macrophytes reproduce, when, and how?
- e) Describe the economic importance of macrophytes.