

CHAPTER 3

Study Guide

Section 1: Community Ecology

In your textbook, read about limiting factors.

Complete the table by checking the correct column(s) for each limiting factor.

Limiting Factor	Abiotic Factor	Biotic Factor
1. Temperature		
2. Rainfall		
3. Predator		
4. Soil chemistry		
5. Prey		
6. Plant nutrients		
7. Oxygen		
8. Sunlight		
9. Climate		
10. Producers		

In your textbook, read about ecological succession.

Use each of the terms below only once to complete the passage.

abiotic factors

climax community

ecological succession

ecosystems

fire

lava flow

pioneer species

primary succession

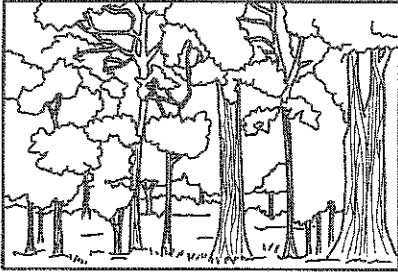
secondary succession

(11) _____ are constantly changing. Both (12) _____ and biotic factors change in every ecosystem. One type of ecosystem change, called (13) _____, results in one community replacing another over time. This process might begin on bare rock, such as a(n) (14) _____. The process begins when (15) _____ begin living on the rock. This process is called (16) _____. The mature community that eventually forms is called the (17) _____. Sometimes that community is destroyed by a(n) (18) _____. A new community will replace the destroyed one through the process of (19) _____.

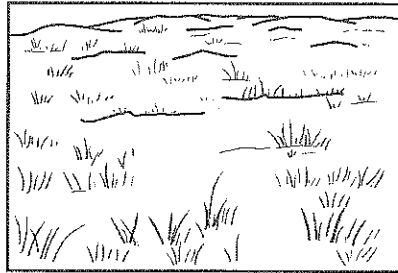
Study Guide, Section 1: Community Ecology continued

In your textbook, read about primary succession.

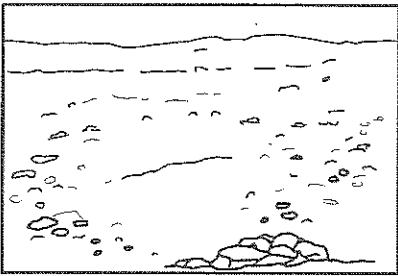
Number the pictures below in the order in which they occur, showing the changes that take place during primary succession.



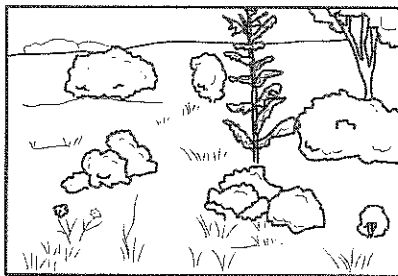
20. _____



22. _____



21. _____



23. _____

In your textbook, read about secondary succession.

Respond to each statement.

24. **Name** the material that is present for secondary succession that is not present for primary succession.

25. **Cite** two reasons why secondary succession is faster than primary succession.

26. **Recall** the name for the mature community that develops in secondary succession.

CHAPTER 3

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Section 2: Terrestrial Biomes

In your textbook, read about the effects of latitude and climate.

Complete the table by filling in the missing information.

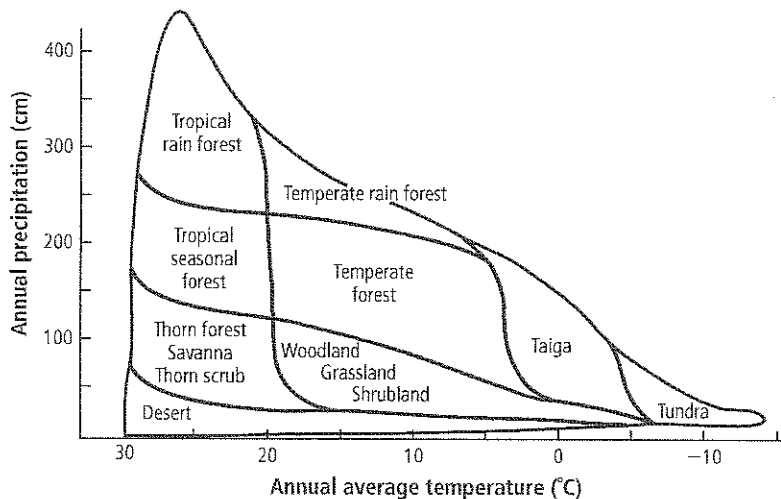
Term	Definition
Weather	1.
Climate	2.
Latitude	3.

In your textbook, read about the major land biomes.

Refer to the figure below and the information in your textbook. Use each of the terms below only once to complete the passage.

- desert
- less
- plants
- precipitation
- temperature
- tropical rain forest
- tundra

Terrestrial Biomes



The biome that receives the most annual precipitation is the (4) _____, and

the biome that receives the least annual precipitation is the (5) _____.

Biomes are classified primarily by the characteristics of their (6) _____.

The graph shows two other characteristics of biomes: (7) _____ and

(8) _____. Based on the diagram, the biome that is most likely to have a

permafrost layer is the (9) _____. Open woodlands have

(10) _____ annual rainfall than temperate forests have.

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Section 3: Aquatic Ecosystems

In your textbook, read about aquatic ecosystems.

Complete the table by filling in the missing information.

Type of Aquatic Ecosystem	Description of Aquatic Ecosystem
Freshwater	1.
2.	where land and water or salt water and freshwater intermingle; includes wetlands and estuaries; does not look like a stream, a pond, or an ocean
3.	4.

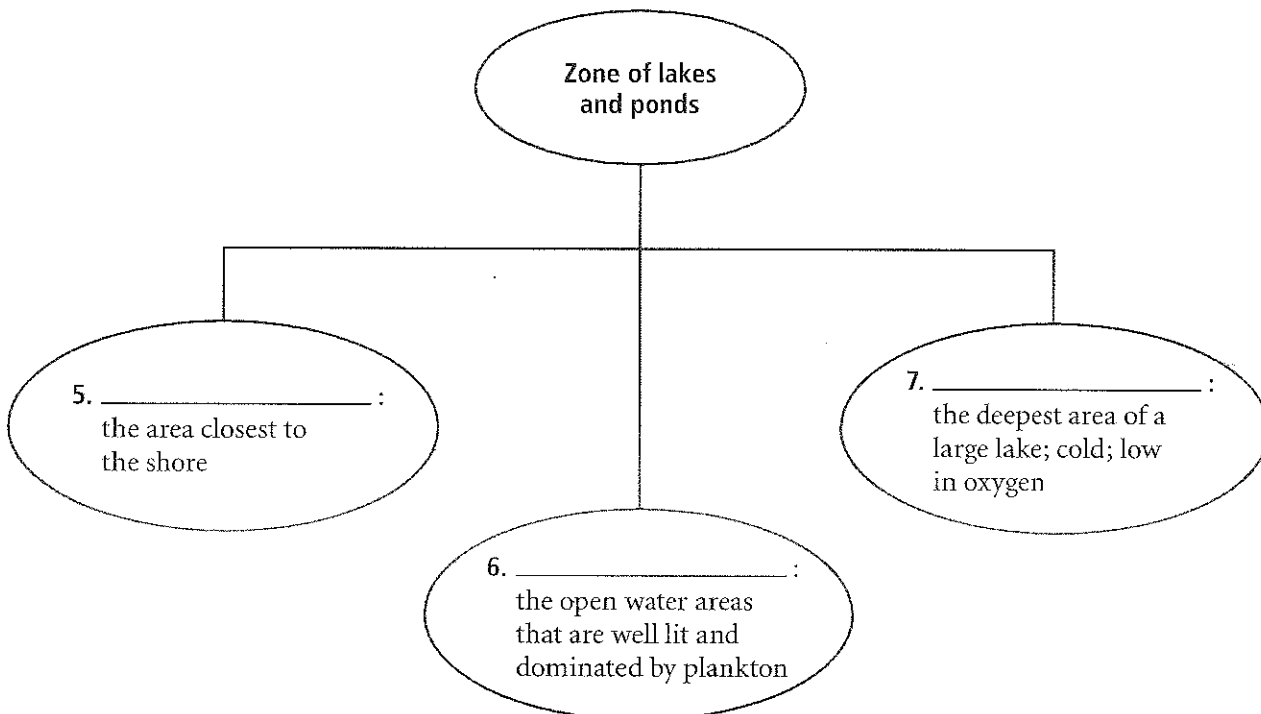
In your textbook, read about lakes and ponds.

Complete the graphic organizer about the zones of lakes and ponds. Use these choices:

limnetic zone

littoral zone

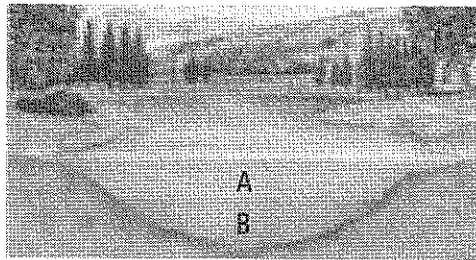
profundal zone



- 1 Before plants can inhabit a rocky area, soil must be present. A pioneer species must start the process of soil formation for succession to take place. Which would be a pioneer species in a rocky area?

A insect
 B lichen
 C weed
 D fern

- 2 The diagram below shows layering in a lake. Why would you expect to find greater species diversity in summer in layer A than in layer B?



A Layer A is closer to shore.
 B Layer B is warmer than layer A.
 C Layer A has more autotrophs.
 D Layer B has too many autotrophs.

- 3 After a community is disrupted by a large-scale event, such as a forest fire, a new community is established through which process?

A primary succession
 B secondary succession
 C soil formation
 D climax succession

- 4 Within aquatic biomes, there are many different environments where different types of organisms thrive. In general, aquatic biomes are divided into photic and aphotic zones. Which determines whether a zone is photic or aphotic?

A distance from land
 B climate
 C water depth
 D latitude

- 5 Terrestrial biomes are classified based on the types of organisms that develop within them. The organisms found in a particular biome have which factor in common?

A biosphere
 B ecosystem
 C pioneer species
 D climate and community

- 6 Which terrestrial biome houses the greatest biodiversity?

A taiga
 B temperate forest
 C tropical rain forest
 D grassland

- 7 Which describes a community most accurately?

A a single life-form found in a biome
 B a group of life-forms belonging to the same species
 C a nonliving component of an ecosystem
 D different populations interacting within the same biome

- 8 Which statement would you NOT use to describe succession?

A It is gradual.
 B It is orderly.
 C It is predictable.
 D It is random.

- 9 For many decades, certain areas in your state have remained hardwood forests that are mainly oak and hickory trees. Predict what will most likely happen to these forested areas in the next three decades.

A They will remain indefinitely and not be affected by environmental influences.
 B They will reach maturity and change in the near future.
 C They will be destroyed by environmental changes.
 D They will continue in their present forms unless affected by environmental changes.

- 10 The first stage of succession of this forest was probably the development of _____.



- A lichens
B shrubs
C mosses
D trees
- 11 Permafrost is characteristic of which biome?
A tundra
B marine
C desert
D taiga
- 12 What event is most likely to initiate primary succession?
A forest fire
B heavy rain
C logging
D volcanic eruption
- 13 Besides plants, what other factor distinguishes one biome from another biome?
A the number of plants in the biome
B the variety of animal species
C average temperatures and precipitation
D geographic location
- 14 The number of species in an area is a measure of _____.
A population
B biodiversity
C niche
D autotrophs
- 15 Compared to a natural forest, a farmer's wheat field lacks _____.
A heterotrophs
B autotrophs
C significant biodiversity
D stored energy