

Ecological Succession Common Assessment**Multiple Choice***Identify the choice that best completes the statement or answers the question.*

— 1. When a volcanic eruption creates a new land form, the terrain is initially rocky and devoid of life. During the first stage of primary succession, pioneer species like mosses and lichens are the only populations that are able to survive. Eventually, vascular plants are introduced into the ecosystem where they will ultimately thrive and dominate the landscape. What process described below does not directly work towards the introduction of these new plants populations?

a. Decomposition of dead lichens and mosses adds nutrients to the ground.
b. Chemical and physical weathering breaks down the rocks creating finer soil.
c. Wind and water currents bring seeds into the developing ecosystem.
d. The volcano remains active and continues to provide new land masses.

— 2. During ecological succession, the conditions of the developing ecosystem are consistently changing. What determines which organisms will be able to thrive and dominate the ecosystem?

a. The organisms which are best adapted to the current conditions will succeed.
b. The species that are able to live in the harshest conditions will always be dominant.
c. The populations which avoid humans will have the greatest success.
d. Parasitic species will have an advantage over less aggressive organisms.

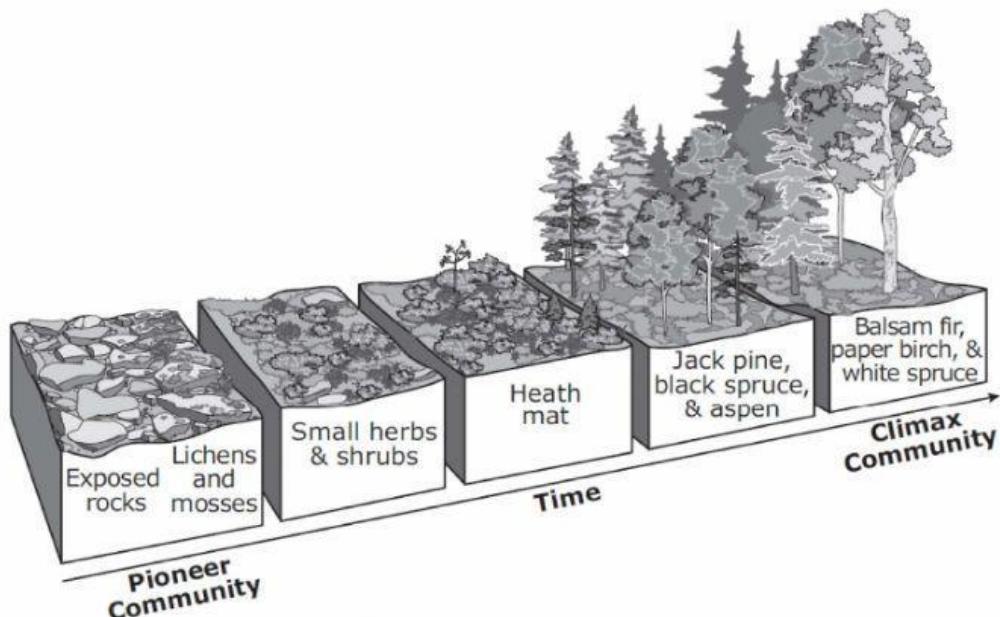
— 3. A lichen results from an interaction between two organisms, a fungus and an alga. The alga supplies food, while the fungus traps water and keeps the alga moist. This is an example of which of the following?

a. Mutualism
b. Predation
c. Biomagnification
d. Parasitism

Name: _____

ID: A

4. The following diagram illustrates the process of a forest maturing into a climax community.

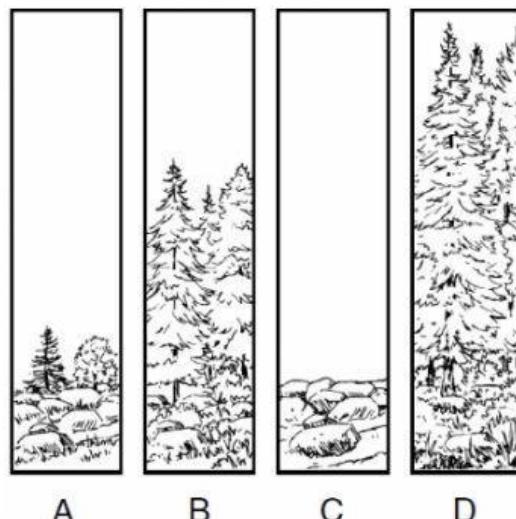


What general conclusions could an ecologist make when contrasting pioneer with climax communities?

- a. The biomass and biodiversity increase over time.
- b. The biomass and biodiversity decrease over time.
- c. The biomass increases over time while the biodiversity remains constant.
- d. The biomass increases over time while the biodiversity decreases.

Name: _____

ID: A



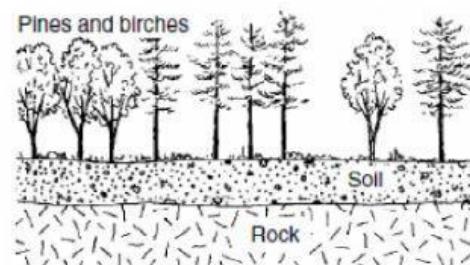
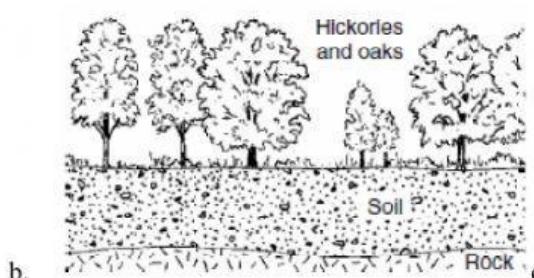
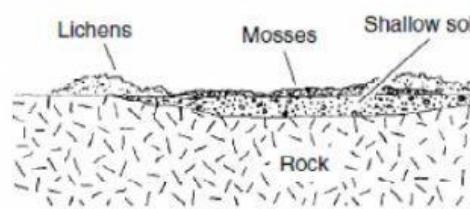
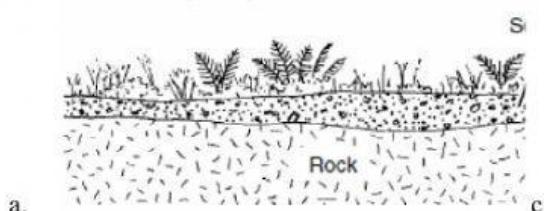
5.

Which order of diagrams would show primary succession in an area that had never before been occupied by living organisms?

a. A, C, B, D c. D, B, C, A
 b. C, A, B, D d. B, A, C, D

6. Each drawing represents different stages in community succession within the state of Virginia. Which of the following drawings represents the climax community in this succession pattern?

Grasses, ferns, and shrubs



7. Which factor is most likely to initiate the process of succession in which a deep freshwater lake becomes a woodland area?

a. accumulation of sediments c. change in the pH of the lake water
 b. growth of microorganisms d. increase in invertebrate population

Name: _____

ID: A

8. In an aquatic habitat, an example of organisms from the pioneer community would be —

- water reeds
- water lilies
- grass
- algae

9. Which natural event would be most likely to cause succession in a grassy field?

- All the soil remains wet for several days after a heavy rain.
- Many grass plants die after a long period of no rainfall.
- Most of the grass is blown flat by a strong wind.
- The grass leaves are injured by a frost.

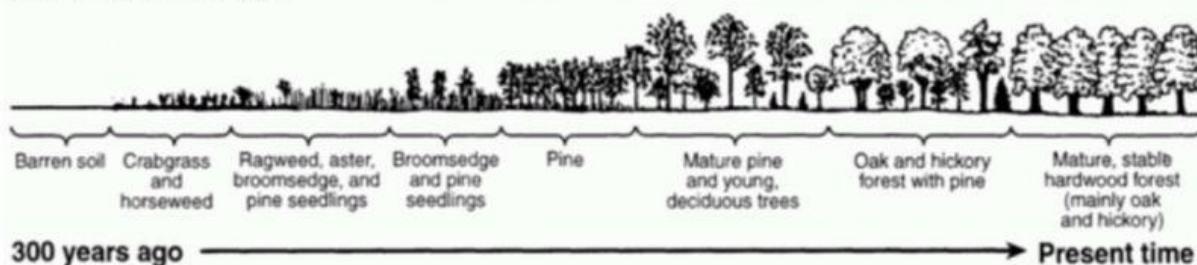
10. A student is studying the ecology of a playa lake, which forms after a rainfall in a dry lake bed. The table lists the organisms that the student observed.

Organisms Observed			
Day 1	Day 2	Day 3	Day 4
Fairy shrimp Clam shrimp Tadpole shrimp	Fairy shrimp Clam shrimp Tadpole shrimp Mayfly larvae	Fairy shrimp	None

Which level of biological organization has the student described in the table?

- Biosphere
- Organelle
- Ecosystem
- Community

11. Base your answer to the following question on the diagram below, which shows the sequence of plant communities that have occupied land that was left barren 300 years ago, and on your knowledge of biology.



Which plant species represent pioneer organisms?

- broomsedge and pine seedlings
- crabgrass and horseweed
- ragweed and aster
- oak and hickory trees

Name: _____

ID: A

12. Surtsey is an island located south of Iceland. The island was formed by a volcanic eruption and first appeared in 1963. The table below contains descriptions of changes in the population and diversity of species on Surtsey.

	Description
I	Sea lyme grass, sea rockets, oyster plants, and other vascular plants appear.
II	The lava and sands have few nutrients and are barren.
III	Dwarf willow trees colonize the island.
IV	Mosses, lichens, and plants that are adapted to dispersal by the sea or the wind and that grow in sand appear.

Wh

Which of these lists the descriptions in the correct order of ecological succession on Surtsey?

13. The graph shows the basic changes in a forest community after a disturbance occurred.



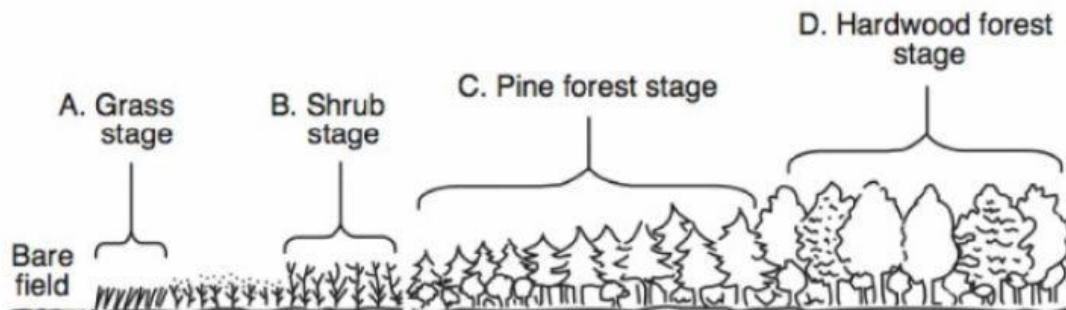
The information shown in the graph suggests that the changes in the forest community were caused by —

- a. tree-leaf replacement after a storm
- b. succession after a fire
- c. repeated habitat destruction
- d. decreased species diversity

Name: _____

ID: A

14. Which of the stages in the diagram below consists of plant species that modify the environment, eventually making it more suitable for another community?



- a. grass stage, only
- b. grass, shrub, and pine forest stages
- c. shrub, pine forest, and hardwood forest stages
- d. hardwood forest stage, only

15. After fire destroys a forest, the area will most likely

- a. remain barren land indefinitely
- b. develop into a desert area
- c. develop into an entirely different type of forest after hundreds of years
- d. recover through gradual changes back to a point of long-term stability