

Name \_\_\_\_\_

## The Ever-Changing Landscape: Exploring Ecological Succession

### Open-Ended Response Answer Key

1. Example: A real-life example of primary succession is the colonization of bare rock surfaces by lichens and mosses. Over time, these pioneer species break down rocks, forming soil, and paving the way for the establishment of grasses, shrubs, and eventually, trees.
2. Pioneer species play a crucial role in facilitating ecological succession by creating favorable conditions for other organisms. For instance, nitrogen-fixing plants enrich the soil with nutrients, enabling other plant species to grow. Similarly, fast-growing grasses stabilize the soil and prevent erosion, creating habitat for insects and small animals.
3. Human activities such as deforestation, urbanization, and pollution can disrupt ecological succession by altering natural habitats and introducing invasive species. For example, clear-cutting forests can prevent the reestablishment of native vegetation, leading to soil erosion and loss of biodiversity.
4. Ecological succession contributes to biodiversity by creating diverse habitats for plants and animals to thrive. For example, mature forests support a wide range of species, including trees, understory plants, insects, birds, and mammals. As succession progresses, ecosystems become more resilient to disturbances and better able to support diverse communities of organisms.

