

Name \_\_\_\_\_

## Protists: The Unsung Heroes of Ecosystems

### Open-Ended Response Answer Key

1. Protists contribute to the diversity and stability of ecosystems through their interactions with other organisms by forming symbiotic relationships, such as mutualistic associations with corals and algae in marine ecosystems. These interactions provide essential nutrients, energy, and support for various organisms, contributing to the overall health and functioning of ecosystems.
2. One method of monitoring protist populations to assess environmental health is through the analysis of water samples using microscopy and molecular techniques. Researchers can examine the abundance and diversity of protists in aquatic environments, providing insights into ecosystem dynamics and potential environmental disturbances.
3. Human activities, such as pollution, habitat destruction, and climate change, can impact protist communities and ecosystem functioning in various ways. For example, nutrient runoff from agricultural activities can lead to algal blooms and changes in protist populations, disrupting ecosystem balance and water quality. Additionally, habitat loss and pollution can directly impact protist habitats, leading to declines in biodiversity and ecosystem health.
4. Protists influence the availability of nutrients for other organisms in ecosystems through processes such as decomposition and nutrient cycling. By breaking down dead organic matter, protists release nutrients such as nitrogen, phosphorus, and carbon back into the environment, where they can be utilized by plants and other organisms for growth and metabolism. This nutrient recycling process is essential for maintaining the productivity and sustainability of ecosystems.

