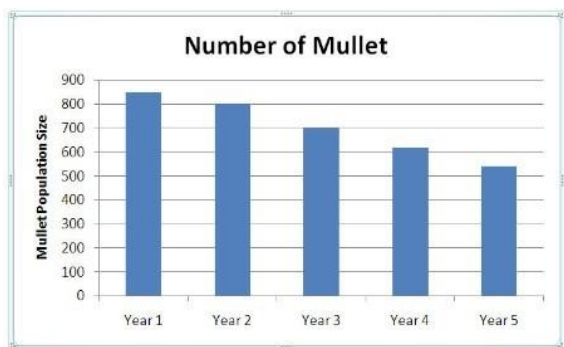


Organisms, Populations, and Ecosystems

SC.912.L.17.5 Population Size

Example One

Mullet are local estuarine fish that move in schools and feed on plankton and plant matter. Natural predators of the mullet include spotted sea trout, sharks, pelicans and dolphins. The graph below shows how the number of mullet in an area has changed over time.



Based on the data, one student concludes that a new predator was introduced into the area during this time period. Which of the following is a likely alternate explanation for the change in the mullet population?

- A. mullet prey increased in the area
- B. mullet parasites decreased in the area
- C. the temperature of the area increased
- D. the amount of aquatic plants in the area decreased

Example Two

How does the predator-prey relationship affect a population?

- A. The predators and prey are in competition with each other.
- B. Usually either the predator or the prey will become extinct.
- C. The predator species usually has exponential growth.
- D. The relationship controls the population size of both species.

Example Three

Data on the immigration and emigration of a fish species would be most helpful in determining which of the following?

- A. biological magnification
- B. interspecies competition
- C. population of the species
- D. predator-prey relationships

Example Four

When an environment has reached its carrying capacity for a certain population, which of the following is true?

- A. Growth and immigration rate is equal to death and emigration rate.
- B. Growth and immigration rate is greater than death and emigration rate.
- C. Growth and immigration rate is less than death and emigration rate.
- D. Growth rate is exponential.

Example Five

The pH of the water in several lakes in Norway and Sweden had decreased to below 5.0 due to an increase in acid rain. Which of the following is most likely to happen in these lakes?

- A. the decline of several fish populations.
- B. an increase in numbers of fish
- C. an increase in the amount of primary producers
- D. increased predator-prey relationships

Example Six

Which of the following is a limiting factor in a population of organisms.

- A. reproductive replacement**
- B. life spans of the members**
- C. fluctuations in atmospheric temperature**
- D. availability of food**

Example Seven

Which of the following are abiotic factors that shape ecosystems?

- A. worms, plants and temperature**
- B. wind, precipitation, and soil type**
- C. niches, trees, and bacteria**
- D. sunlight, mushrooms, and wind**

Example Eight

The common brushtail possum is a marsupial native to Australia. This possum was introduced to New Zealand where it had no natural predators and had an abundant food supply. Which of these likely occurred a few years after the introduction of this possum to New Zealand?

- A. The possums became extinct.**
- B. The possums developed shorter life spans.**
- C. The possum population grew to a larger size.**
- D. The possum population evolved into a different species.**

Example Nine

The number of pythons found throughout Everglades National Park has increased in recent years. These huge snakes are not native to Florida and are believed to have been released into the wild by pet owners. Wildlife biologists have initiated attempts to capture and remove these pythons. Which statement best explains the biologists' reasons for removing these pythons from the Everglades?

- A. The pythons could upset the territorial boundaries of native organisms.**
- B. The pythons could adapt to overcome diseases common to native snakes.**
- C. The pythons could prey on native organisms and cause native population to decline.**
- D. The pythons could begin to interbreed with native snakes and produce a more successful species.**

Example Ten

Why are there so few aquatic plants and phytoplankton that live at the bottom zones in the ocean?

- A. The ocean floor contains many decomposers.**
- B. Most sunlight is absorbed before reaching these levels.**
- C. Water is a limiting factor.**
- D. The temperature in these zones is extremely low.**