Biodiversity and water

Water scarcity is a global issue that is not only threatening our access to clean and safe drinking water but also posing a significant threat to biodiversity. The scarcity of water resources is exacerbating the loss of various species and ecosystems, leading to a decline in overall biodiversity.

Humans can affect access to freshwater in many ways, for example they can pollute bodies of water, thereby making them undrinkable. While wealthy countries can make the investments necessary to have access to freshwater, poorer countries often cannot. This means that underdeveloped countries may suffer from devastating droughts, which can lead both to dehydration and starvation.

Impact on biodiversity

Biodiversity refers to an abundance of different types of plant and animal species within a particular region. The prefix *bio* means living, while *diversity* refers to different types of things. Around the world, more than 125,000 animal species live entirely in freshwater habitats, including 15,000 species of fish, 4,300 species of amphibians, and 5,000 species of molluscs, such as clams and oysters. Millions of other species, including humans, depend on freshwater to drink. When an area loses a large percentage of its freshwater, many animals die off. In some cases, species go entirely extinct. This leads to a decrease in the region's biodiversity.

When a region loses its biodiversity, it disrupts the food chain in many ways. For example, if a species goes extinct, all the species used to feed on it must find another source of food. Say, for example, that a particular species of freshwater frog dies because its habitat has been depleted in a drought. This means the population of birds that feeds on it may decline as well, as it lacks sufficient food. Conversely, the insects that the frog fed on may increase in number, as the frog is no longer around to keep their population in check.

Importance of biodiversity

One of the main advantages of biodiversity is that certain natural processes can be made only by plants and animals while humans simply cannot. Biodiversity can play an important function in the cleaning of water, for example. When water passes through lakes, wetlands, and streams, it often encounters different species of fungi, algae, and bacteria. Many of these microbes actually filter microscopic particles out of the water, making it safe for humans to drink. Even some larger species do a similar work. For example, the caddis fly constructs nets underwater that filter out different kinds of particles, which the insect then eats. Wetlands rich in these filtering organisms act as natural water filtration systems. When the biodiversity of a region declines, many of the organisms critical to the filtering process can disappear. So, pressures on the freshwater supply can cause biodiversity to decrease, which can cut the drinkable water supply even further.



caddis fly: *tricottero*
clam: *vongola*
overall: *complessivo*
oyster: *ostrica*
starvation: *inedia, fame*
thereby: *conseguentemente*

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1 Choose the correct option.

1. What is biodiversity?
   - **a.** A lack of different types of plant and animal species within a particular region.
   - **b.** An abundance of different types of plant and animal species within a particular region.
   - **c.** The different types of plants and animals that live in freshwater habitats.
   - **d.** A method of conserving the planet's small amount of potable water.

2. The cause of humanity's increased water consumption is an increased population. What is the effect?
   - **a.** Less potable water, a growing threat to biodiversity.
   - **b.** More potable water, a growing threat to biodiversity.
   - **c.** Less potable water, a decreased threat to biodiversity.
   - **d.** More potable water, a decreased threat to biodiversity.

3. Poorer countries are at greater risk during droughts than richer countries. What evidence from the passage supports this conclusion?
   - **a.** With no water for crops, droughts can lead to starvation and dehydration.
   - **b.** Droughts in Africa have been more prolonged than in the past due to climate change.
   - **c.** During droughts, many animals die, and sometimes whole species go extinct.
   - **d.** Poor countries often cannot afford investments that ensure access to freshwater.

4. Read the following sentences: "When the biodiversity of a region declines, many of the organisms critical to this filtering process can disappear. So, pressures on the freshwater supply can cause biodiversity to decrease, which can cut the drinkable water supply even further." Based on this information, what can you conclude?
   - **a.** Water supply and biodiversity are unrelated.
   - **b.** Biodiversity affects the freshwater supply, but not vice versa.
   - **c.** Water supply and biodiversity are interconnected.
   - **d.** The freshwater supply affects biodiversity, but not vice versa.

5. What is this passage mostly about?
   - **a.** The effects of water loss on biodiversity.
   - **b.** The effects of biodiversity on drought.
   - **c.** The distribution of the world's freshwater.
   - **d.** The effects of population growth on the water supply.

6. Read the following sentences: "Say, for example, that a particular species of freshwater frog dies because its habitat has been depleted in a drought. This means the population of birds that feeds on it may decline as well, as it lacks sufficient food. Conversely, the insects that the frog fed on may increase in number, as the frog is no longer around to keep their population in check." What does the word "conversely" mean?
   - **a.** In the same way
   - **b.** For this reason
   - **c.** As an example
   - **d.** On the other hand

2 Use information from the text to support your answer to these questions.

1. Describe a problem caused by losses in biodiversity.
2. How might humans help prevent losses in biodiversity?



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