

SCIENCE·3D

HELLBENDERS: SAVING THE SNOT OTTER

In this packet, sample student answers are provided in **red** and notes to teachers are in **blue**.

Using this **Explore Your Backyard** activity, students will reinforce their understanding about how changing environments may harm or help organisms and how traits influence how these organisms will respond to changes.



Surviving a Changing Environment

Will a change in the environment hurt or help an organism? Sometimes we can make predictions if we study the traits of an organism. For hellbenders, a drop in oxygen levels will hurt them. But, if more big rocks fall into a stream it will probably help them. Let's investigate some traits that might affect survival and reproduction of organisms in your local ecosystems! Your teacher will help you decide what ecosystem to study.

The ecosystem I studied was:

A forest stream

List the organisms you observed in the ecosystem.

Trout, sculpin, hellbender, heron, frogs, mosquito, raccoon, spider, snails, fern, tree

Choose one organism to study. My organism is a:

Frog

List the traits that help your organism survive in the current environment.

Camouflage coloring, webbed toes, porous skin, sticky tongue, strong legs

Based on your list of traits and your research, answer the questions on the next page about how your organism might respond to the following changes in its ecosystem. In your answers, consider how the organism's traits might help or hurt it when things change.

The questions below can be modified to fit the specific ecosystem that your students are studying. For all of the questions below, accept answers that make a logical argument as to how the organism might respond to changes in its environment.

Describe how an increase in temperature might affect your organism.

It might make the water too warm and increase the amount of algae, or affect the breeding cycles

Describe how a decrease in temperature might affect your organism.

It might make the environment too cold for the frogs to survive.

Describe how a large flood might affect your organism.

A large flood might increase the water habitat for a frog

Describe how a fire might affect your organism.

The trees on the edge of the stream could burn down making it a less healthy habitat

Describe how an increase in the amount of food might affect your organism.

This would help the frog by making it easier to find a meal. It might attract new potential mates to the area.

Describe how a decrease in rainfall might affect your organism.

It could dry up the stream completely.