

Ectotherm ER: Frogs Under the Weather

Student Brainstorm Challenge

Name _____ **ANSWER KEY**

1. Look at the bar graph and answer the following question. What are the 3 largest threats to threatened amphibian species?

Habitat Loss

Contaminants

Disease

2. **Brainstorm Challenge:**

What kinds of things could change in a frog's habitat or environment that could impact survival? List at least 3 things.

Answers will vary but could include: pollution,

introduction of predator/competitor, habitat

loss or modification, climate changes, loss of

food resources, etc.

3. **Brainstorm Challenge:**

What life processes of a frog might climate change affect? **Answers will vary but could include: foraging**

(hunting for food), escaping predators, mating/reproduction, metabolism, immune defenses, ...

Answers will vary, could include:

What could a frog do to maximize its chance for survival in a warmer climate? **seek shade when temperatures**

are too hot, burrow to find cooler temperatures, aestivate, enter cool water, migrate to an area with a

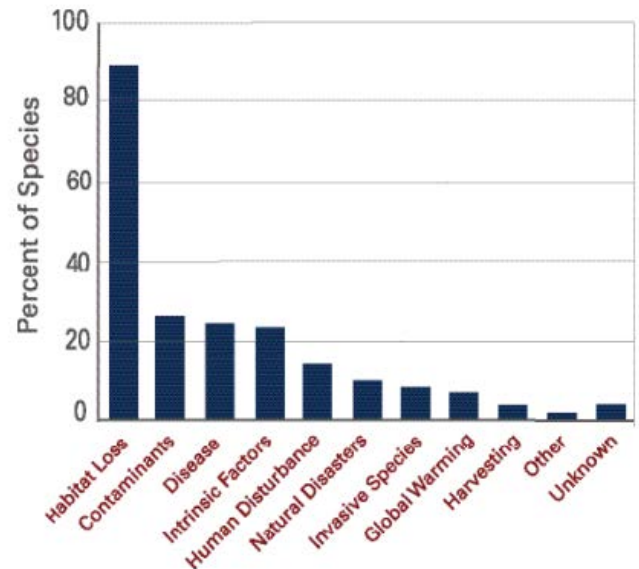
cooler climate (e.g., higher latitude, higher elevation), come out of hibernation earlier in spring...

In a more variable climate? **Answers will vary, could include: move back and forth between microhabitats,**

live near a variety of microhabitats, be able to adjust timing of hibernation and breeding accordingly, be

able to find shelter from both heat and cold and to find water when needed.

COMPARISON OF RISK FACTORS AFFECTING THREATENED AMPHIBIANS



Based on analysis of 1,177 threatened (CR, EN, and VU) species.
Note: more than one factor can threaten a species.

4. **Brainstorm Challenge:** Design an experiment that would test how microhabitat conditions affect body temperature of an ectotherm. Use a numbered list to explain your procedure.

HELPFUL HINTS:

- The habitat will be your school grounds.
- We can use a temperature gun or ibutton temperature sensors to measure temperature in different microhabitats.
- We can't use actual live frogs.

Open ended. Answers will vary. Students should be encouraged to be creative.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

What are some microhabitats a frog might live in? How would different microhabitats affect an ectotherm? Answers will vary, may include: burrows, ponds, streams, dry ground, moist ground, under a tree, in the open, in a tree, etc. Each microhabitat may be good for heating or cooling, conserving water or evaporating it to keep cool, but no particular microhabitat is likely to have all the frog needs to keep its body temperature and water balanced all the time.