



## Biodiversity and Climate Change: What do Frogs Have to Say About It?

### Organization:

**Title:** Biodiversity and Climate Change: What do Frogs Have to Say About It?

**Summary:** Students will explore the impact of climate change on biodiversity, specifically on frog species and their life history traits.

**Inquiry Question:** Inquiry Question 4: What are Some Common Threats to Biodiversity?

**Duration:** 45 Minutes

**Learning Environment:** Indoor

**Season:** All

### Materials:

- Climate Change and Frogs Study Summary.pdf
- Climate Change and Frogs Activity.pdf
- Answer Key.pdf
- <https://soundcloud.com/uottawa-naturewatch/sets/learn-about-the-frogs-of>
- <https://californiaherps.com/info/sonograms.html>
- <https://www.torontozoo.com/tz/ticresources>
- <https://www.torontozoo.com/!/pdfs/adoptapond/Fw-brochure.pdf>

### Curriculum Links:

Science and Technology: A1.1, E2.8

### Meta Data:

**Content Type:** Activity

**Bundle:** Gifts of the Earth

**Theme:** Global Climate Change; Biodiversity Crisis

**Subject Area:** Biology, Environmental Education, Science

**Curriculum Focus:** 7

Instructions:

### b. Climate Change as a Threat to Biodiversity:

1. Students explore the impact of climate change on biodiversity by examining frog spring emergence. Students can learn about the following study by studying the infographic in the **Climate Change and Frogs Study Summary.pdf**:

Klaus, S. P., & Lougheed, S. C. (2013). Changes in breeding phenology of eastern Ontario frogs over four decades. *Ecology and Evolution*, 3(4), 835-845.



Research shows a dramatic shift in spring emergence using song meter data.

2. Students listen to audio samples on the QUILLS website. Students can also visit the OttawaU soundcloud where samples were taken from:

(<https://soundcloud.com/uottawa-naturewatch/sets/learn-about-the-frogs-of>)

to become familiar with the different frog calls. Students then engage in a matching activity in which they match the type of frog with the call that it makes. Activity available in the **Climate Change and Frogs Activity.pdf** and in the **Answer Key.pdf**.

To help guide students with reading the waveforms, teachers can use this website:

<https://californiaherps.com/info/sonograms.html>

Optional Extension Activity:

1. Using the infographics from Toronto Zoo Turtle Island Conservation:

<https://www.torontozoo.com/tz/ticresources> students can contribute to citizen science using Toronto Zoo's FrogWatch program:

<https://www.torontozoo.com/!/pdfs/adoptapond/Fw-brochure.pdf>