

# Habitat Fragmentation

## Learning Objectives

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By the end of this lesson, students will be able to:

- Describe how modern technology is being used to support conservation efforts.
- Explain the role of companies like Colossal Biosciences in developing tools like vaccines, bioacoustic technology, AI-powered tools, and genetic biovaults.
- Identify real-world conservation problems that require innovative solutions.
- Apply engineering thinking to propose and communicate their own design-based conservation ideas.

## Key Takeaways

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- Conservationists are using new technology to fight back against the biodiversity crisis.
- Engineering and creative thinking are essential to solving modern biodiversity challenges.
- Combining existing conservation efforts with additional resources and cutting-edge technologies could have major impacts on wildlife and ecosystems.
- Good news exists within conservation, and scientists are making progress when it comes to helping animals persist.

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### Preteaching

### Analyzing a Quote

- a. Pass out the viewing guide so the students can start the lesson with the first question.
  - i. What does this quote mean to you?  
“History doesn’t repeat itself, but it often rhymes.”

-Mark Twain

## Preteaching

## Video

- b. Students will continue filling out the viewing guide as the video plays.
- c. Optional: Before transitioning to the next activity you can have students pair up and discuss their answer to question 7.

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## Activity A: Guided Reading | Comparing & Contrasting Today & the PETM

This guided reading introduces the Paleocene-Eocene Thermal Maximum (PETM) as a powerful example of how Earth's climate has changed in the past... and how life responded. By examining this ancient warming event, students begin to explore the parallels and differences between past and present-day climate change.

The PETM is one of the closest geologic comparisons we have to today's global warming. In this reading, students learn how species adapted, migrated, or struggled during this rapid shift, and how that history can inform conservation decisions we make today.

The goal is to help students connect Earth's ancient history with modern challenges like habitat fragmentation. By looking back, we can better understand which animals may need help moving or adapting to keep up with the warming world we live in now...

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## Links

[Viewing Guide](#)

[Guided Reading: The PETM](#)

[\(KEY\) Guided Reading: The PETM](#)