

Why preserve biodiversity?

(http://www.cce.org/resources/learning_centre/classroom_activities/preserve_biodiversity.asp)

Time:

Three class periods (it may be reduced to two periods if students write the essays at home)

Materials:

- Internet access
- Notebook
- Writing materials

Overview

People take different approaches when making the case for preserving biodiversity. Some argue that biodiversity is important to ensure access to new medications, while others emphasize the importance of maintaining healthy ecosystems for recreational purposes such as fishing or camping. Of course, many people use more than one argument when calling for biodiversity protection. Students will discuss the importance of maintaining ecosystems and will learn about the various arguments that people make in favor of preserving the Earth's biodiversity. Canada's public lands are the home of several rare plant and animal species, so naturally preserving public lands is one of the issues on the bio-diversity front.

Objectives

Students will:

- View photos of endangered species on the Internet and discuss the reasons why these animals are threatened and why they should be protected.
- Use the words "biodiversity", "ecosystem", and "extinction" in sentences to demonstrate their understanding of the words' meanings.
- Explain why all members of an ecosystem are important.
- List the reasons why biodiversity should be preserved.
- Read Internet articles and take notes on various arguments in favour of preserving biodiversity.
- Write essays in which they explain what they feel are the most compelling reasons for preserving biodiversity and also describe the arguments they think would be most likely to convince the general public that biodiversity should be preserved.

Geographic Skills

- Acquiring Geographic Information
- Organizing Geographic Information
- Analyzing Geographic Information

Suggested Procedure

Opening:

Give students approximately ten minutes to browse the list of vanishing species at [Bagheera](#). Then ask them to describe in a class discussion a few of the animals they've learned about and the reasons why these animals are threatened. Ask them to explain why they think it's important for these animals to be protected.

Development:

Define the following terms, or have students define them: biodiversity, ecosystem, extinction. To demonstrate their understanding of these terms, ask students to write or state sentences

that use all three of these words. For example, they might say, "In order to preserve biodiversity and prevent species extinction, all members of an ecosystem must be protected."

Ask students to explain why all the members of an ecosystem are important. What happens if one member of an ecosystem no longer exists? For example, what might happen if a certain type of fish dies out of a lake ecosystem, leaving its predators without a food source and its prey without a predator? Discuss potential impacts for animal and plant members of the ecosystem and for people who live near or make use of the ecosystem (e.g. fishers or tourists).

Divide the class into groups of about three students each. Ask the groups to discuss and list the reasons why they think biodiversity is important and why endangered animals and habitats should be protected. Why should ecosystems be kept healthy, with every member of the ecosystem protected? Groups should list all their ideas.

Discuss the groups' ideas with the class. Inform students that, as they may have already realized from making their lists, there is more than one argument in favor of preserving biodiversity and maintaining healthy ecosystems. Five major arguments are:

Economic ("Biodiversity can help people make money or keep people from losing money");

Recreational ("People love outdoor activities like fishing and backpacking, which would not be possible if ecosystems were destroyed");

Human health ("Biodiversity can help people find better cures for illnesses");

Human rights ("If biodiversity is protected, indigenous people can continue to live in their native lands"); and

Spiritual/intrinsic value ("Biodiversity should be preserved for its own sake; animals and plants have a right to live; people rely on wild places and creatures for spiritual fulfillment").

Ask students if they've identified any of these types of arguments in their lists. Tell them that many people who believe biodiversity should be preserved will use more than one of these arguments to make his or her point. For example, a person may believe that every species has an intrinsic right to live but may also be excited about prospects for finding new medications from the Earth's plant and animal species.

Have the students visit the following Web sites to read some of the arguments in favour of preserving biodiversity. For each site they visit, ask them to write "economic," "recreational," "human health," "human rights," and "spiritual" to indicate which argument, or arguments, the site makes in favour of preserving biodiversity.

Extinction:

[What Can We Do?](#)

[Why It Matters](#)

Closing:

After students have looked at the above Web sites, ask them to write one to three sentences for each of the five types of arguments. Their sentences should provide specific examples of these pro-biodiversity arguments.

Suggested Student Assessment

Have each student write a two-paragraph essay about preserving biodiversity. The first paragraph should explain which arguments they found the most compelling and why. The

second paragraph should explain which of the arguments they read about on the Internet seems the most likely to convince people that biodiversity should be preserved. You can pose the following questions as guidelines for writing the paragraphs:

- *Paragraph 1:* You've learned about several different reasons why people believe biodiversity should be preserved. Which of these reasons do you find the most convincing, and why? Choose one or two.
- *Paragraph 2:* Which of the reasons for preserving biodiversity do you think would be the most likely to convince people that biodiversity should be preserved? Why?

Extending the Lesson

Have students write letters to the director of the World Wildlife Fund or another conservation organization in which they recommend the angle they think that organization should take when trying to convince the public to support biodiversity protection. Which of the five pro-biodiversity arguments do they think would be the most productive and convincing, and why? They can suggest that the organization use all five arguments, just one, or a few.

Have students search the Internet or print materials to find examples of conservation programs. Ask each student to choose one program. Ask the students to write paragraphs explaining how the success of this program would help address the economic, recreational, human health, human rights, and spiritual/intrinsic value arguments in favor of biodiversity. For example, how might the success of this conservation program help indigenous people?